Global financial crisis of 2007 : analysis of origin & assessment of contagion to emerging economies : lessons & challenges for financial regulation

Shazia Ghani

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Présentée par **Shazia GHANI**

Thèse dirigée par **Faruk ÜLGEN**

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La crise financière de 2007

Analyse des origines et impacts macroéconomiques sur les économies émergentes. Quels sont les leçons et les défis de régulation financière ?

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Monsieur Ahmed SILEM
Professeur à l'Université de Lyon 3
(Président de jury et Rapporteur)

Monsieur Xavier RICHET
Professeur à l'Université de Paris 3
(Rapporteur)

Monsieur Jean-François PONSOT
Maître de Conférences à l'Université Pierre Mendès France, Grenoble II
(Membre)

Monsieur Faruk ÜLGEN
Maître de Conférences-HDR à l'Université Pierre Mendès France, Grenoble II
(Directeur de thèse)

Université Joseph Fourier / Université Pierre Mendès France /
Université Stendhal / Université de Savoie / Grenoble INP

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SUMMARY

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LIST OF ABBREVIATION

- ABS: Asset Backed Securities
- AIG: American International Group
- AEs: Advanced Economies
- ARMs: Adjustable Rate Mortgages
- BAAC: Bank for Agriculture and Agricultural Co-Operatives (of Thailand)
- BRSA: Banking Regulation and Supervision Agency (of Turkey)
- BCBS: Basel Committee on Banking Supervision
- BOA: Bank of England
- BOP: Balance-of-Payments
- BIS: Bank of international settlements
- BNM: Bank Negara Malaysia
- CPI: Consumer price Inflation
- CRA: Credit Rating Agencies
- CRE: Commercial Real Estate
- CDS: Credit Default Swaps
- CDO: Collateralized Debt Obligation
- CINB: Continental Illinois National Bank
- CBRT: Central Bank of the Republic of Turkey
- ERM : European Exchange Rate Mechanism
- EMEs : Emerging Market Economies
- EU: European Union
- FSA: Financial Services Authority
- FSB: Financial Stability Board
- FSF: Financial Stability Forum
- FSLIC: Federal Savings and Loan Insurance Corporation
- FSOC: Financial Stability Oversight Council
- FDIC: Federal Deposit Insurance Corporation
- FHLBB: Federal Home Loan Bank Board
- FED: The Federal Reserve System (Central banking system of USA)
- FX: Foreign Exchange
- FIH: Financial Instability Hypothesis
- FSA: Financial Services Authority
- FDIC: Federal Deposit Insurance Corporation
- FOMC: Federal Open Market Committee (of Fed reserve USA)
- FSMP: Financial Sector Master Plan
- GDIs: Government's Debt Instruments
- GDP: Gross Domestic Product
- GFC: Global Financial Crisis
- GSEs: Government-Sponsored Enterprises

- GLB: The Gramm–Leach–Bliley Act
- GMAC: General Motors Acceptance Corporation
- GNI; Gross National Income
- G20:The Group of 20 Nations
- G30:Consultative Group on International Economic financial issues
- HELOC: Home Equity Line Of Credit
- IMF: International Monetary Fund
- IAS: International Accounting Standards
- IOSCO :International Organization of Securities Commissions
- KLSE: Kuala Lumpur Stock Exchange
- LOLR: Lender of Last resort
- LTCM: Long-Term Capital Management
- LCFI: Large Complex Financial Institution
- MBS: Mortgage-Backed Securities
- MOSF: Ministry of Strategy and Finance (of South Korea)
- NMC: National Monetary Commission
- OBS: Off-Balance Sheet
- OECD: Organization for Economic Cooperation and Development
- OTC: Over the Counter
- OTS: Office of Thrift Supervision
- PIMCO: Pacific Investment Management Company
- RBI: The Reserve Bank of India
- SEC: Securities and Exchange Commission
- SDIF: Savings Deposit Insurance Fund of Turkey
- S & Ls: Savings and Loans
- SOEs: State Owned Enterprises
- SPVs: Special Purpose Vehicles
- TBTF: Too Big To Fail
- TARP :Troubled Asset Relief Program
- U.S: United States
- USA: United States of America
- UK :United Kingdom
- UNCTAD; United Nations Conference on Trade and Development
- VAR: Value-At-Risk
- WB: World Bank
- WEO: World Economic Outlook

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Résumé

L'étude vise principalement à analyser l'origine de la crise financière globale de 2007 (2007 GFC) au États-Unis et dans les autres économies avancées (AE), ses impacts macroéconomiques sur les économies (de marché) émergentes (EME) ainsi qu'un examen critique de leurs réponses en termes de politique économique. L'étude met en évidence les défis en matière de régulation post crise et discute des implications des réformes qui ont été récemment introduites dans les EME. A cette fin, la thèse se décline en quatre chapitres.

Le premier chapitre établit le contexte théorique de la thèse et présente un exposé critique des approches orthodoxe (dominante/néolibérale) et hétérodoxe concernant la fragilité financière et la crise. Après avoir examiné l'approche orthodoxe, on met en évidence le mérite et la pertinence du cadre d'analyse de Minsky connu en tant que « Hypothèses d'instabilité financières » (FIH), afin de comprendre la question de la *fragilité* dans les économies de marché. Dans le deuxième chapitre, la thèse propose un compte rendu exhaustif des explications et des conséquences de la crise de 2007 en mettant l'accent sur ses prémisses qui se trouvent sur le marché immobilier américain. On met également en évidence les principaux dysfonctionnements du marché financier et du système de régulation qui se trouvent à l'origine de la crise. Le troisième chapitre présente une analyse approfondie du processus de transmission de la crise de 2007 aux EME. Par la suite, on met en évidence les réactions en matière de politique économique (monétaire) de certaines EME sous forme d'étude comparative. Le quatrième chapitre analyse les diverses réformes de régulation financière introduites après la crise. L'examen indique que ces réformes (la loi Dodd Franck Act de 2011 et les nouveaux standards Bâle III) sont d'inspiration néolibérale et qu'elles ne peuvent pas résoudre le problème de fragilité et de crise financière.

Sur la base de notre analyse développée au travers de ces quatre chapitres on met en évidence deux principaux résultats.

Premièrement, les marchés financiers ne devraient pas être laissés aux vicissitudes des marchés (libres). Il faudrait mettre en place un cadre de régulation pertinent assorti des principes macroprudentiels qui puissent remplacer l'approche dominante de marchés libres efficients. Les orientations de politique et d'analyse de « gouvernement puissant » et de « banque centrale puissante », assumées par l'économiste hétérodoxe Hyman Minsky, semblent appropriées pour comprendre et contenir la fragilité des économies de marché. Ensuite, il est recommandable pour les EME d'adopter des politiques cohérentes avec leurs propres caractéristiques macroéconomiques et avec leur niveau de développement financier et non de s'attacher à une croyance aveugle dans la libéralisation du marché ou dans le paradigme néolibéral.

Mots-clés: crise financière, instabilité financière, pays émergents, réforme de la réglementation, règlementation macroprudentielle

ABSTRACT

This study mainly aims to investigate the origin of the global financial crisis of 2007 (2007 GFC) in United States and in other advanced economies (AEs), its macroeconomic impact on the Emerging Market Economies (EMEs) and the critical analysis of their policy response. Study highlights the regulatory challenges of the post-crisis period and discusses the implications of newly introduced regulatory reforms for the EMEs. In this aim the thesis is delineated into four chapters.

First chapter of the thesis sets the theoretical context of the dissertation and presents a critical review of orthodox (mainstream/neoliberal) and the heterodox approaches on financial fragility and crisis. After giving a critique of the orthodox approach, merits and relevance of Minsky's framework to understand the issue of fragility in capitalistic economies is underscored. His "*Financial Instability Hypothesis" (FIH)* is compared with the *"Efficient Market Hypothesis* (EMH). Our analysis demonstrates that prevalent macroeconomic policies having orthodox theoretical foundation are the responsible of the increased financial fragility and recurrent financial crisis (both in AEs and EMEs) during last three decades including the 2007 GFC.

Second chapter of the thesis provides a compelling compendium of various explanations and consequences of the 2007 GFC focusing on its origination in the US housing market. Although subprime market triggered the crisis but deeper causes of crisis have roots in the flawed macroeconomic growth paradigm (neoliberal growth model). Nevertheless failure of market mechanism and lax regulation also played important role.

Third chapter presents an in-depth analysis of the contagion of the 2007 GFC to EMEs. It argues that polices of financial liberalisation and the belief in the efficiency of the deregulated financial markets contributed to the eruption of different financial crisis in the EMEs during the last three decades. The analysis and comparison of the past crisis policy response and the reforms these economies introduced lead us to identify important factors that helped these economies to remain resilient or non-resilient to the impact of the 2007 GFC.

Fourth chapter of the thesis investigates the various financial regulatory reforms introduced in the aftermath of the 2007 GFC. Our analysis indicates that these reforms (The Dodd- Franck Act of 2011 and the new Basel III Banking Standards) are rooted in neoliberal philosophy so would be unable to solve the issues of fragility and financial crisis. Furthermore, these reforms are heavily tilted towards the economic needs and structures of advanced economies and do not address the issues and challenges of EMEs. Our analysis in the fourth chapter underscores the need of financial regulation with macroprudential orientation.

On the basis of our analysis in these four chapters, two major conclusions are emphasized. Firstly, the financial markets should not be left to the vicissitudes of free markets, and a relevant regulatory framework having macroprudential orientations must be implemented to replace the dominant free-market-based approach. Analytical and policy insights ("big government" and "big central bank") endorsed by heterodox economist Hyman Minsky seem appropriate to understand and constrain the fragility of capitalist market economies. Secondly, it is advisable for EMEs to adopt policies keeping in view their own macroeconomic characteristics and the level of financial development and not by the blind faith in market liberalisation or the neoliberal policy paradigm.

KEYWORDS: Emerging markets economies, financial instability and financial crisis, financial liberalisation, macroprudential regulation, regulatory reforms

JEL CLASSIFICATION: G18, E320, E440, E580, F620

GENERAL INTRODUCTION

More than a century ago, William Gladstone[1] has rightly expressed the importance of finance[2] for the economy as follows: "Finance is, as it were, the stomach of the country, from which all the other organs take their tone." A financial system (comprising banking and non-banking institutions, financial markets and instruments, pension funds and insurance companies, and a large regulatory body i.e. central bank to oversees and supervises the operations of these intermediaries) plays an extremely significant role in the market based economies. It is a sector in the economy that utilizes productive resources to facilitate capital formation through the provision of a wide range of financial tools to meet the different requirements of borrowers and lenders (James, 2007, p. 2). Walter Bagehot (1873) has acknowledged the critical role of finance to facilitate the mobilisation of capital for the industrial growth of England. Economic literature is affirmative about the importance and critical role of financial system for stimulating economic growth. Some worth mention early works on finance and development along the Schumpeterian[3] lines include John Gurley and Edward Shaw (1955), Goldsmith (1969), Hicks (1969), McKinnon (1973) and Miller (1998). Empirical research has also established this positive relationship and the seminal work of King and Levine (1993) based on the empirical analysis of 80 countries found that financial development leads to higher output growth via promoting private saving and investment.

A growing and vibrant economy requires a financial system that can intermediate funds between various agents in order to facilitate capital formation through the provision of a wide range of financial services and tools. However, financial sector can only perform well these jobs when it is stable. In discharging above stated functions, the financials system deals with risks and this situation made it imperative to have stability in the financial system and the

[1] British Prime Minister in 1858.

[2] Finance means the creation and management of money, banking, credit, investment, assets, and liabilities at personal, corporate and public levels.

[3] Schumpeter (1912) postulates that well-functioning banks spur technological innovation by identifying and funding those entrepreneurs with the best chances of successfully implementing innovative products and production processes.

financial markets generally. Furthermore, financial system is not static and its constant evolution due to forces of financial innovation, deregulation and financial globalisation has made it prone to various bouts of instability (bank failures, bubble burst, indebtedness and failures in the payment system due to liquidity freeze) and fragility. Nonetheless the most visible form of fragility is the recurrent financial crises[4] that have become a regular feature of market based economies (emerging economies and the advanced economies both) since 70s. Macroeconomic effects of financial instability can be very costly due to its contagion across the whole economy. Therefore, maintaining a stable financial system becomes an important policy objective of the public authorities. Recent financial history of both advanced economies and the emerging market economies (EMEs) is replete with abundant examples of financial crisis or financial fragility. Some Latin American countries have gone through repeated incidents of financial sector instability in the 1980s. Argentina debt crisis and financial fragility in Chile are examples of this period. Another pertinent example of widespread financial instability was the East Asian currency crisis of 1997-98, which developed in Thailand and engulfed the Indonesia, Korea and Malaysia. Since the 90s, majority of the EMEs suffered the various financial crisis and periods of financial turmoil; Mexico (1994), Russia (1998), Turkey (2001-02), Argentina (2001) are some notable examples. Nonetheless, the phenomena of financial crisis (instability) is not unique with EMEs only, advanced economies have also witnessed such episodes. Scandinavia in the late 1980s experienced widespread instability in the financial systems of Sweden, Finland and Norway. United States also has its fair share of crisis episode. Great depression of 1930s, Stock Market Crash of 1987, Saving and Loan Crisis, Long Term Capital Management (LTCM) and last but not least the US subprime crisis of 2007 which turned into a global financial meltdown, the most costly financial displacements since the Great Depression. Table

[4]The World "crisis" has its roots in the Latin word "crisis" which, according to Real Spanish Language Academy (RAE, 2009), have following meanings: (1) Decisive moment in a serious business and of difficult and important consequences; (2) Scarceness, famine and (3) Difficult or complex situation.

"A" below has summarised the fiscal costs of financial instability in terms of GDP for the pervious episodes of crisis in selected advanced and emerging economies.

Table A : Fiscal Costs of Financial Instability					
Country	**Period**	**Fiscal Cost as % of GDP**	**Country**	**Period**	**Fiscal Cost as % of GDP**
United States	1984-91	3.2	Mexico	1994-95	18.0
Japan	1991-99	24.5	Brazil	1994-95	10.0
Venezuela	1994-95	7.5	Korea	1997-98	19.5
Norway	1987-89	6.4	Malaysia	1997-98	34.5
Finland	1991-93	13.5	Indonesia	1997-98	34.5
Argentina	1980-82	55.3	Chile	1981-83	4.0
Source; Crokett (1997), MaFarlance(1999) and The World Bank (1999)					

Problem Statement, Central Question of the Thesis and Detailed Work Plan

The table above is not complete until it shows numbers about the economic and financial loss incurred due to the 2007 global financial crisis; the most costly financial displacement of financial history after Great Depression. According to IMF estimates (2009), total cost of this crisis reached at $11.9 trillion and it was equivalent to one-fifth of the entire world's annual economic output (Conway, 2009). A report issued by The Pew Charitable Trust in 2008-09 shows that United States alone suffered massive losses of $650 billion of GDP income, 5.5 million jobs, $360 billion in wages, $3.4 trillion of real estate wealth (July 2008–March 2009), $7.4 trillion stock wealth (July 2008–March 2009) and $230 billion fiscal rescue cost (Swagel, 2009). These numbers and facts led to an obvious and basic question that *why the 2007 subprime crisis has erupted and how could it have devastating effects of a huge magnitude on the emerging market economies.* This primary research question has an important offshoot to address that *what regulatory policy challenges has ascended from this crisis in terms of right approach of financial regulation to stabilize the financial markets.* To have an answer, we shall precede in four steps which will naturally results in the four chapters of the thesis.

1. In order to address the primary research question, first step sets the base of the discussion and analysis. In this aim, the first chapter of the study presents a critical review about the theoretical underpinning of the policies that contributed to financial crisis and financial fragility over the last thirty years or so. Two competing explanations (or the theoretical schools of thought), i.e. the orthodox or the mainstream macroeconomic approach and the alternative heterodox approach, are reviewed in detail. Efficient Markets Hypothesis (EMH), the representative of orthodox view and the "Financial Instability Hypothesis" (FIH), representing the heterodox theory are compared and contrast to see what they say about instability and uncertainty in financial markets and what offer as policy.
2. Secondly, we will attempt to identify the essential initial conditions which have been instrumental to shape the 2007 financial crisis in the 2nd chapter. To decipher that what actually happened in the US (subprime) financial market is the key to proceed further our analysis. What are main failures behind this collapse? Historical comparison of the current crisis is drawn with the most important past episodes to highlight important theory and policy lessons.
3. Thirdly, the thesis proceeds further by establishing how the amplification mechanisms have played out in the real time, taking the crisis from the United States to EMEs. Some relevant country case studies will be examined to highlight the nexus of financial liberalisation and the financial crisis or fragility in the EMEs. Furthermore, 3rd chapter of the thesis will highlight the factors behind the varied degree of resilience among the various EMEs and critical analysis of their policy response to the 2007 GFC.
4. And fourthly, our analysis will establish to what extent regulatory deficits contributed to the financial crisis of 2007. This 4th chapter of the study will present an exhaustive

analysis of the noteworthy regulatory reforms introduced in the aftermath of 2007 GFC. Our analysis demonstrates that reforms are still rooted in the mainstream macroeconomic theory and Minsky's insights are ignored by the policy makers. Macro prudential aspect of the financial regulation as a tool to have more stable financial system is discussed and advocated in this last chapter of the study.

Theoretical framework and Methodology

The study mainly aims to investigate the origin of the GFC in United States, its macroeconomic contagion to the EMEs and critical analysis of regulatory challenges in the post crisis era. Undoubtedly, the 2007 GFC has shaken the foundation of mainstream macroeconomic (neoliberal growth paradigm) theory and policy. Utter failure of self-correcting ability of market mechanisms, risk diversification practices of financial institutions and market efficiency (the hallmark of mainstream economic theory) have opened up a global polemic to reconsider the merits of deregulated financial markets. With the hindsight, there is need to highlight the importance of alternative perspective on financial crisis synthesized by Minsky in terms of theory and policy. In this aim, the thesis acmes the relevance of the Minsky's theoretical framework of financial instability and re-regulation due to its historical cum institutional approach. He has emphasized the destabilizing effects of financial innovation, the role of cumulative euphoria, and the skill of bankers/financial institutions to circumvent regulatory capture. Thus it seems more suitable to analyze the evolution of financial fragility and crisis as compared to the mainstream macroeconomic policy framework. On the policy side, although Minsky is not optimistic to eliminate crisis altogether but he believes in mitigating and constraining speculative behaviour of financial markets through comprehensive set of policies. In this regard he advocates the role of institutions ("*big government*" and "*big bank*") as circuit breakers against the instability and euphoria.

Furthermore his vision about the capital development of an economy is significantly relevant for the EMEs also. To substantiate the arguments, theoretical literature is compared and reviewed on the subject and examples are drawn from US financial system and case studies from EMEs are analyzed. The study will highlight the important factors relevant to regulatory policy garnered from the understanding of the fundamental causes of the 2007 GFC.

0.1. Problématique of Financial Crisis & Macroeconomic Theory

Kindleberger once said famously: "*financial crisis are like a pretty girl: difficult to define, but recognisable when seen*"(Kindleberger and Laffargue,1982, p.2).Undoubtedly, Kindleberger's metaphor reflects the powerlessness that policy makers and academics both have been encountering in the face of repeated episodes of financial crisis or volatility since the centuries. Repeated occurrences of financial crisis in emerging and advanced economies since 70s reveal that it is easy to search for triggers of crisis once these erupt but it is far more difficult to discern the warning signs of a looming collapse of a currency, a bank or a stock market. Economic theory is designated broadly two traditions about the possible explanation of the financial crisis and development of fragility in economic system. One tradition uses orthodox theory to uncover the sources and causes of financial crisis and second strand of research seeks heterodox approach beneficial for the explanation. Orthodox approach is also sometimes referred as the mainstream economic approach. Main pillars of the orthodoxy were Milton Friedman's "*Monetarism*"; and *New-classical economics* as pioneered by Robert Lucas and this school believe in the efficiency of market mechanisms (markets are complete and self-correcting) as the regulators of economic life. The eruption of US subprime crisis in 2007 and its global contagion have shown a turning point in the history of capitalism and of economic thought. It seemed to manifest as the culmination of a 30-year domination of economic policy by a free-market ideology of general equilibrium models that has been

popularly called as neo-liberalism and market fundamentalism or sometimes the Washington Consensus[5] has come to naught. The basic framework of market based economy is tied to the notion of the 'invisible hand' and the modern manifestation of this principle is referred to as the efficient market hypothesis. According to this hypothesis, financial markets are so well constructed that all the available information relevant to any financial asset is already incorporated in its price. Another most important manifestation of this hypothesis is that government intervention and increased regulation can only results in markets inefficiency. Mainstream macroeconomic theory got severe criticisms after the 2007 meltdown and it is argued that such financial meltdown was inevitable consequence of perverse theoretical belief in the laissez faire and the efficient markets hypothesis. Rooted in this belief, since 1980s, advanced and emerging economies pursued the goal of deregulation and financial liberalisation.

Orthodox theory postulates the financial crisis as a series of unfortunate but isolated events, only marginally related to each other, and caused mostly by peculiar problems. Monetarists believe that financial crisis are essentially banking crisis. Friedman and Schwartz (1963) and Cagan Philips (1965) have extensively studied the various banking crisis in the United States. Friedman and Schwartz (1963) view that bank failures are the result of unwarranted "panic" and most of the failures were consequence of illiquidity. Based on the mainstream macroeconomic theory, empirical research is abundant about different explanations of financial crisis mechanisms. The first generation models emphasize the role of macroeconomic variables in causing currency crisis in the presence of fixed exchange rates (Flood and Marion (1999); the second generation models have focused on the role of

[5] Washington Consensus is a reform policy developed by Williamson in 1989**.** Its objective was to restructure the Latin America countries after crisis they had experienced during the 1980s. The Washington Consensus was one of the first reform programmes and proposed recommendations to bring stability within an economy. Washington Consensus become a benchmark and was promoted by the IMF, the World Bank and the US Federal Treasury Department.

speculative attacks. Institutional imbalances, information asymmetries and network effects are considered as the causing factors behind crisis in the more recent models (Allen and Gale, 2000; Kaminsky and Reinhart, 2003; Kodres and Pritsker, 2002; Yuan, 2005; Pavlova and Rigobon, 2007; Allen and Babus, 2008; Obstfeld, 1996; Garber, 1996; Eichengreen, Rose and Wyplosz, 1995) and the Mishkin's asymmetric information and moral hazard problems (1992) offered new dimensions to the research about financial crisis. The third generation models arise after the financial crisis of East Asia and joined the monetary crisis and the fragility of the financial sector and contagion from other countries. Goldfajn and Valdés (1997), Kaminsky and Reinhart (1998), Eichengreen et al. (1996), Kaminsky, Lizondo and Reinhart (1998), Morris and Shin (1998), Calvo (1998), Kodres and Pritsker (2002) are some seminal contributions to the third generation models of crisis.

Contrary to the mainstream theory the heterodox[6] school of thought (also known as debt and financial fragility view) has made a commendable contribution about the development of financial crisis and fragility and has influenced the macroeconomic thinking. The rich and prestigious tradition of analysis offered by Wicksell (1898), Irving Fisher (1933), Kindleberger (1978) and Hyman Minsky (1977,1982) have pointed out that cyclical fluctuations characterised by dynamic instability are generated due to the interaction between current and inter-temporal financial constraints in a sophisticated monetary economy. Nonetheless, the insights of Minksy have gained significance in the environment of theoretical confusion after the 2007 financial collapse. He has been extensively referred and cited by both academics and policy makers even in the traditional circles as well with a renewed interest in his scholarly legacy. His followers have highlighted the most illuminating aspects of his view of the financial fragility and role of financial regulation (Kregel 1997,

[6] Generally refers to economic ideas that are outside the mainstream that includes such ideas as post-Keynesian.

2008; Vercelli 2001; Bellofoire and Ferri, 2001; Davidson, 1992, 2001, 2004; Toporowski, 2001; Dymski, 2003; Whalen, 2007; Tymoigne and Wray 2008).

0.2. Systemic Development of Fragility and Role of Institutions

As discussed above, mainstream theorists rule out possibility of a crisis or fragility if system is not disturbed by any external shock. On the contrary, heterodox theorists believed that even without external shock financial system can be source of fragility. Minsky held that capitalist economy has an inherent tendency to develop instability, which culminates in severe economic crisis; the fulcrum of his *"financial instability (fragility) hypothesis"*. He has argued that "instability is determined by mechanisms within the system, not outside it; our economy is not unstable because it is shocked by oil, wars or monetary surprises, but because of its nature" (Minsky, 1986, p.172). His hypothesis has initiated a research scholarship worth in order to understand the working and evolution of financial capitalism and, in particular, the recurring episodes of financial instability. Accordingly, economy goes through a predictable cycle including bubbles. These cycles are attached with the type of the financing involved are known as *hedge*, *speculative*, and *Ponzi.* Hedge financing is a situation when firms expect reasonable cash flows from the investments to oblige their contractual payments today and in the future. Speculative financing occurs when firm's expected cash flows fall short of contractual payments in the short run however firms are able to meet interest payments obligations and this stage of speculative financing involves the rolling over of maturing debt. The third stage of the cycle is Ponzi financing and it's similar like the speculative financing but it involves the equivalent of negative amortization. For Ponzi firms, essentially, outstanding debt increased and the borrowers involved in speculative and Ponzi financing expect to make their payments on debts to be met by refinancing, increasing debts, or even liquidate other assets of the firms (Minsky, 1992, 1986). A revisit to Minsky framework in the

first chapter will open up a polemic in an attempt to understand the relative superiority of the heterodox approach embedded in the institutional and historical perspective of financial crisis. Although various researchers have termed the current crisis as the "*Minsky moment*[7]*"* (McCulley, 2007; Magnus, 2007; Whalen, 2007; Lahart, 2007, Kregel, 2009) but our objective is not to debate about the accuracy of the mechanism of the crisis evolution predicted by Minsky, rather we are more interested to highlight the importance of Minsky's academic perch in understanding the development of fragility and role of the structure of institutions in this regard. Institutions are very important for Minsky and role of institutions ("*Big Government*" and "*Big Bank")* as the circuit breakers to the euphoria is very topical to analyse in the current scenario of fragility.

Post-crisis (GFC of 2007) era is a high time to reconsider the role of self-interest because the standard macroeconomic theory did not help foresee the crisis, nor has it helped understand it or craft any solutions (Buiter, 2009). Therefore a Minksyan lecture seems a good beginning for the understanding and the containment of the fragility. In this regard, Fazzari and Papadimitriou (1992), Dimsky- Pollin (1993) Papadimitriou and Wray (1998), Bellofiore and Ferri (2001) and Bellofiore (2009) have acknowledged the importance of Minsky's framework to understand the tendencies of fragility and crisis in the modern sophisticated capitalist economies.

[7] According to Vercelli (2009), the term "Minky moment" was created in 1998 by Paul McCulley to characterize the Russian crisis. According to Magnus, the stage for Minsky moment is first set by "a prolonged period of rapid acceleration of debt" in which more traditional borrowing is replaced by borrowing that depends on new debt to repay existing loans. Then the "moment" occurs, "when lenders become increasingly cautious or restrictive, and when it isn't only over-leveraged structures that encounter financing difficulties. At this juncture, the risks of systemic economic contraction and asset depreciation become all too vivid" (Magnus, 2007, p. 7).

0.3. Historical Context of Financial Crisis: Do Parallels Exist?

The historical records from the AEs and EMEs offers both instructive lessons and cautionary accounts about the occurrences of various financial crisis and financial bubbles. Hyndman has presented a detailed account of historical perspectives in his famous book "*Commercial Crisis in the Nineteenth Century"*. The classic on financial history "*Manias, Panics, and Crashes"* by Kindleberger gave a detailed account of various episodes in the history. *A Monetary History of the United States 1867–1960* by Milton Friedman and Anna Schwartz is very important piece of reference to be mention here. *The International Debt Crisis in Historical Perspective* by Eichengreen and Lindert (1992) and *"This Time Is Different: Eight Centuries of Financial Folly"* by Reinhart and Rogoff (2010) present some impressive narrative of the issue. Modern history of financial crisis starts by a severe crisis (and resulting depression known as Great Depression) in 1929, when the financial markets plummet and the United States GDP declined by more than 30%. However, since 1970, there has been an observable pattern of rapid and turbulent changes in the financing behaviour of various institutions marked by rising indebtedness, volatile asset prices, and periods of financial stress in financial and non-financial sector. A cursory examination of American economic history suggests that mismanagement of money and credit has led to financial crisis and several explosions over the centuries. Some other significant events from the US can be the failure of the Continental Illinois Bank and Trust Company in 1984, the savings and loan debacle of the 1980s, and the Long-Term Capital Management crisis in 1998. The list is not exhaustive without appending the Wall Street Crash of 1987, the dotcom bubble and last not least the subprime financial crisis of 2007. For EMEs, it seems that financial crisis became a curse of 1990s. Several of these economies particularly suffered from the exhaustion of capital inflows in the wake of the 1997-99 crises. The devastating wave of financial implosions in Mexico, Thailand, South Korea, Russia, Brazil, Turkey, Argentina and other emerging economies have thrown millions

of people into poverty and misery. Due to its depth and economic loss around the globe, the 2007 GFC has some parallels with great depression of 1930s.

0.4. Nexus of Financial Liberalisation and Financial Crisis in EMEs

Based on the mainstream macroeconomic theory, majority of the EMEs pursued the policies of the financial liberalisation and the deregulation of the financial markets since 80s. Since then financial crisis (debt, currency and the exchange rate related crisis) have become essential features of these economies coinciding with the increased integration of these economies with international financial markets (Agosin and Huaita, 2011). Thus, in case of EMEs the trigger of financial crisis is the implementation of macroeconomic policies of financial liberalisation and deregulation and not the financial innovation (Frenkel, 2003). Despite its long term benefits, financial liberalisation can be destabilising in the short run by encouraging domestic banks to engage in risky and speculative activities and create moral hazard behaviour (Caprio, 1992; McKinnon and Pill, 1996; Corsetti et al.1999; Huang and Xu, 1999; Hellmann et al., 2000; Demetriades and Andrianova, 2004). Financial liberalisation in the absence of proper regulatory framework has amplified the risk-taking attitude of financial institutions in several EMEs. Deregulation of previously 'repressed[8]' financial markets raises domestic interest rates in the EMEs and the combination of fixed exchange rates and capital account liberalisation resulted in augmented yields in the financial markets. This type of financial crisis was first observed in Argentina and Chile during the late 1970s (i.e. the so-called Southern Cone episodes). Similar type crises were observed in the Mexican and Argentine Crisis of 1995, the East Asian Crisis of 1997, the Russian Debt Crisis of 1998, the Brazilian Crisis of 1999, and the Argentina and Turkish Crisis of 2001, 2002.

[8] Government controlled

The global financial crisis of 2007 has made it imperative to provide further insights into these opposing arguments concerning financial liberalisation through a novel analysis of the EMEs. In this aim the 3rd chapter of the study deals with these issues in quite a detail. Initially, EMEs seemed to be coupled from the financial crisis of 2007 but later on these economies could not shield off and the financial and the commodity channel played a role in the contagion of fragility and the financial crisis. Nevertheless, impact of the crisis is quite varied among the EMEs. Those EMEs remained resilient to the 2007 GFC who have learned the lessons from the past and improved their macroeconomy policy and regulatory frameworks.

0.5. Government Intervention in Financial Markets & Role of Regulation

> *Money, will not manage itself, and Lombard Street has a great deal of money to manage*. **Walter Bagehot, Lombard Street (1873)**

The GFC of 2007 has rightly established the inadequacy of the pre-crisis regulatory frameworks and "reflects the greatest regulatory failure in modern history". Stiglitz (2010) concluded that the major lesson of the recent crisis is that the pursuit of self-interest, particularly within the financial sector, may not lead to societal well-being. Henry Kaufman has put it like "The more free-market oriented our economy, the greater its need for official financial supervision" (Henry Kaufman, Financial Times, 6th August, 2008). Mainstream macroeconomic policy imbedded in the "laissez faire" and "invisible hand" approach sees no need of government interventions in a belief that markets can self-correct themselves in the event of any disequilibrium or crisis; this is in complete contrast with the heterodox perspective which sees the government intervention as necessary through institutional set up. Mainstream regulatory approach relies on a flawed institutional framework that has been largely captured by financial interests. It overestimates the ability of markets and

underestimates the importance of government intervention and regulation. On the contrary, Minsky posits that a big government and a big central bank are necessary to keep the capitalist economies stable. Therefore apt (intelligent) intervention and institutional structures are necessary for market economies to be successful. Chapter 13 of his "*Stabilizing an unstable economy"* offers detailed policy recommendations and advocates the role of institutions as circuit breakers against euphoria.

The GFC of 2007 has ushered a new momentum for the need of a substantive regulatory reforms required for resilient financial markets. What is the right approach to regulate and supervise the financial sector? The answer cannot be simple; nevertheless a reconsideration of basic principles is needed to design effective yet flexible regulatory mechanisms which have the capacity to deal with financial innovations and systemic risks[9]. The discussion in the 4th chapter contributes to the evolving debate on regulatory policy in advanced economies and impacts of some extra territorial legislation of the AEs on the EMEs. An important lesson of the 2007 GFC is that financial regulation needs to be more dynamic, appropriately taking into account the role of financial innovations and new products. Another very important issue analysed in the 4th chapter is about the effectiveness of recently enacted Dodd-Frank Act and the Basel III banking standards. These newly introduced regulatory reforms are heavily tilted towards advanced economies problems and will result in decreasing the EMEs access to international finance and halt the capital markets development in these economies. Furthermore, the theoretical foundations of these reforms are still embedded in the orthodox approach therefore practically nothing is expected to change at the structural level in the foreseeable future.

[9]Although the issue of systemic risks has been subjected to considerable study, there is not widespread agreement on how to define this concept. It "refers to the possibility that a triggering event, such as the failure of an individual firm, will seriously impair other firms or markets and harm the broader economy" (FRB of St. Louis, 2009, p. 403). This issue is discussed in the chapter 2 with reference to regulatory and supervisory failures.

0.6-Macroprudential Orientation of Financial Regulation & Supervision

Macroprudential approach to regulation has emerged during the 2007 GFC as a broadly agreed framework to stabilize the financial markets. Macroprudential approach evaluates and responds to the financial system as a whole. It aims to reduce the buildup of systemic fragility and strengthen the financial system's resilience to adverse shocks by reducing the social costs of systemic risk materializations (BOE, 2009; CGFS, 2010b; Clement, 2010; Galati and Moessner, 2011). Geneva Report (2009), The Squam Lake Report (2010), The Warwick Commission Report (2009), The Basel Committee on Banking Supervision, G-30 Report (2010) and G-20 Report advocates about adopting the macroprudential orientation of regulation and supervision. Minsky also advocated the significance of macroprudential approach, Ronnie Phillips (1997), pointed out that not only Minsky's emphasis on the critical role of prudential supervision of individual banks, but also the need for regulators to monitor emerging threats to the stability of financial markets – a process that is now referred to as "*macroprudential supervision"*.

As stated in the above pages, the study is alienated into four chapters followed by a general conclusion. General conclusion presents the conclusive insights based on the theory-based diagnosis and the analysis of the issues undertaken in the whole study.

CHAPTER 1: RISE OF FRAGILE FINANCE, RECURRENT FINANCIAL CRISIS AND ECONOMIC THEORY

> *"[Economists] will have to do their best to incorporate the realities of finance into macroeconomics"* **PAUL KRUGMAN (New York Times, Sept 2, 2009)**
>
> *"If we knew how to "incorporate the realities of finance into macroeconomics" we would have done so already. We haven't done so, because we don't know how"* **JOHN H. COCHRANE (Sept 16, 2009)**

National and Global financial systems are constantly evolving in terms of functions and products. This evolution has transformed the very structure of financial markets and institutions during last three decades. Trends of globalisation, innovations (financial and technological) and de-regulation of financial markets have resulted in increased growth in the financial institutions (Anginer and Demirguc-Kunt, 2011) both in advanced and emerging economies. Despite benefits of greater productivity, increased capital flows, lower borrowing costs, better price discovery, risk diversification and risk management, these trends have increased the financial fragility around the globe. Rising indebtedness, massive loan defaults, and periods of instability in the financial sector particularly have become a norm. The recurrent episodes of financial crisis have demonstrated the interconnectedness of the financial institutions and exposed the instability of the globalized unregulated financial markets. The huge fiscal cost[10] of financial instability and crisis makes it imperative for the public authorities to maintain a stable financial system; a sine qua non for the sustainable economic growth (Anginer and Demirguc-Kunt, 2011). Thus, the identification of the sources of persistent instability supports the public authorities to devise pertinent polices[11].

[10] Hoggarth and Sapporta (2001) have estimated that it can be over 20 percent of GDP.
[11] This analysis supports macroprudential perspective of regulation and supervision - discussed in detail in the 4th chapter of the study.

Despite being an important public policy objective, yet there is no consensus definition[12] of financial stability is available. Most of the definitions points towards crucial components but are very broad. Generally, financial stability is a situation where the financial system is both operating efficiently and able to withstand relatively large economic and financial shocks. On the contrary, financial instability conversely, could manifest through banking failures, intense asset price volatility or a collapse of market liquidity, liquidity freeze and, ultimately resulting in a complete disruption of the payment and settlement system in an economy. Financial instability affects the real economy due to its macroeconomic linkages and national economies have incurred huge fiscal costs in terms of loss in production, consumption and investment. Financial stability also means that key institutions operating in the financial markets are stable. It means that these institutions are sound and have built up enough capital buffers to absorb losses or external shocks. Furthermore, these financial institutions have sufficient liquidity to manage their daily operations and can remain liquid in anticipation of any vulnerability (Donath and Cismas, 2008).

According to Crockett (1997), financial instability is a situation in where fluctuation in the price of credit potentially deteriorates the economic performance or financial institutions are unable to honour their contractual obligations. For Mishkin the "financial instability occurs when shocks to the financial system interfere with information flows so that the financial system can no longer do its job of channelling funds to those with productive investment opportunities. Indeed if the financial instability is severe enough, it can lead to almost a complete breakdown in the functioning of financial markets, a situation which is then

[12] In terms of analytical paradigms for alternative views on financial instability, Borio and Drehmann (2009) have distinguished three types of models. The first type comprises of models of self-fulfilling equilibria generated by exogenous shocks, in the sense of Diamond and Dybvig, 1983. The second refers to models with negative shocks – which can be idiosyncratic or systematic (Allen and Gale, 2004) – and an amplification mechanism (e.g. contagion shaped by informational and balance sheet linkages as in Rochet and Tirole, 1996b). The third type of models consists of representation of the "endogenous cycle view of financial instability" in the spirit of Minsky (1982) and Kindleberger (1996).

classified as a financial crisis" (Mishkin, 1999). Ferguson (2002) views financial instability as a situation when negative externalities of the market occur and negatively impact the real economy. In the words of Davis, financial instability or disorder can be defined as entailing heightened risk of a financial crisis - "a major collapse of the financial system, entailing inability to provide payments services or to allocate credit" (Davis, 2009). This definition interprets financial instability as a process that not only include crisis itself but also incorporates the elements about the build-up of vulnerability in favourable economic conditions which precedes it. Some definitions of the financial stability focus on the robustness of the financial system to some external shocks (Padoa-Schioppa, 2003; Allen and Wood, 2006). It is also possible that financial system may itself be a source of shocks (Schinasi, 2004). Possibility of systemic risk as manifestation of instability is highlighted by the Group of Ten (2001), De Bandt and Hartmann (2000). Absence of any financial crisis is also referred as a situation of financial stability (Oosterloo et al., 2007, p. 338). However all these cited definitions reflect an inherent weakness due to their retrospective character and make it difficult for authorities to envision appropriate policies to contain the instability. Here, an operational definition proposed by the Borio and Drehmann (2009) seems more apposite: "We define *financial distress/financial crisis* as an event in which substantial losses at financial institutions and/or the failure of these institutions cause, or threaten to cause, serious dislocations to the real economy, measured in terms of output foregone. We define financial *in*stability as a set of conditions that is sufficient to result in the emergence of financial distress/crisis in response to normal-sized shocks. These shocks could originate either in the real economy or the financial system itself. Financial stability is then defined as the converse of financial instability (Borio and Drehmann, 2009, p. 2). This definition highlights the possibilities of the origin of the shock in the financial sector itself, a long standing tradition of the heterodox economic theory and particularly Minsky insights about the subject.

Furthermore, it highlights the macroprudential aspects about the supervisor of financial stability[13].

Theoretical foundation of the origin, causes, and propagation mechanisms of financial crisis/development of financial fragility is important to understand to get the understanding of its evolution and for the design of better policies. Economic theory on the subject can be divided into two schools. The mainstream (Orthodox) theoretical approach dominated by the monetarists like Friedman and Schwartz (1963) and Cagan Phillip (1965) postulates that financial crisis have monetary origin and are essentially the bank failures caused by the government intervention. The alternative (heterodox) approach championed by Fisher, Minsky and Kindleberger is known as 'debt and financial fragility' view. According to this view, financial crisis follow a credit cycle with some positive displacement and result in higher level of debts, mispriced risk estimates by the lenders and economy is caught in a bubble. When this bubble is punctured by a negative shock, a bank crisis is initiated. This pattern is normal feature of a business cycle (Fisher, 1933; Minsky, 1977; Kindelberger, 1978). This 'debt and financial fragility' view of the heterodox school has been repeatedly vindicated by recurrence of various credit and asset price booms and debt crisis in the advanced and emerging economies. Thus, the first chapter of the thesis sets the base for proceeding analysis by presenting a synthesis of different theories about financial fragility/crisis. It opens up a polemic about the factors that caused financial fragility or crisis in the market economies and critique the mainstream macroeconomic theory and stemming polices. It also advocates the superiority of heterodox approach to understand the origins and systemic development of instability and its policy prescriptions for stabilisation (particularly its implications for bank regulation and supervision).

[13] Any operational financial stability framework would have a "macroprudential", as opposed to "microprudential", orientation (Crockett, 2000; Borio, 2003).

With this background, the first chapter of the thesis is alienated into three sections. The opening (first) section develops an analysis to ascertains the factors behind the rise of financial fragility (financial crisis) over the last three decades. It also identifies the principal structural changes in the nature of finance and financial markets during this period. Section 2 presents an extended but a comparative review of two dominating theoretical literature on financial crisis. These are the orthodox approach championed by the monetarist work of Friedman and Schwartz (1963) and Cagan Philip (1965) and the alternative approach postulated by Fisher (1933), Minsky (1977, 1982) and Kindleberger (1978) about the development of fragility and financial crisis. In section 3, "*Efficient Market Hypothesis*" is compared with the Minsky's "*Financial Instability Hypothesis"* to get a view about policy and reforms from the two competing approaches. This section is followed by the conclusion of the chapter.

Section 1: Fragile Finance and Recurrent Financial Crisis

The recurrent events of instability and crisis in both advanced economies (AEs) and emerging market economies (EMEs) during the last two decades highlight the need for reducing financial fragility and the risk of repeated occurrence of financial crisis. Nevertheless, financial fragility and financial crisis are the two very vividly intertied ideas. The concept of financial fragility dates back to Fisher (1933) and Keynes (1936), who theorized that the debt financing of investment can have destabilizing effects. Writings and research insights of these two cited economist were motivated by their personal observations of the "*Great Depression"* and of numerous banking panics (Lagunoff and Stacey Schreft, 1998). In the following decades, Minsky (1977) has advanced a slightly stronger version of the same idea, i.e. that modern capitalist economies are inherently unstable or fragile because of their heavy reliance on debt to finance investment.

1.1. Fragile Finance and Financial Crisis

Generally a financial system is considered fragile when a small shock has large effects (Allen and Gale, 2004). According to Calomiris; financial fragility can be referred as an unavoidable consequence of a dynamic capitalistic economy (Calomiris, 1995, p. 254). Financial history is replete with numerous examples of financial fragility where a small shock has a significantly huge impact on the financial system and real economy. Kindleberger has explained it well and described the immediate possible cause of financial crisis as: "May be trivial, a bankruptcy, a suicide, a fight, a revelation, a refusal of credit to some borrower, some change of view which leads a significant actor to unload. Prices fall. Expectations are reversed. The movement picks up speed. To the extent that speculators are leveraged with borrowed money, the decline in prices leads to further calls on them for margin or cash, and to further liquidation. As prices fall further, bank loans turn sour, and one or more mercantile houses, banks, discount houses, or brokerages fail. The credit system itself appears shaky and the race for liquidity is on" (Kindleberger, 1978, pp. 107-108). Besides these Kindleberger's listed shocks, there can be a bursting of bubble, fall in asset prices or currency value or a stock market crashes, some kind of bank failures or panics. Fisher has quite succinctly elaborated one mechanism by which a small shock might lead to a recession. He has identified over indebtedness and deflation as the key contributing factors. According to him at some point of time, a state of over indebtedness exists; this will tend to lead to liquidation, fall in the net worth of business and eventually precipitating bankruptcies (Fisher, 1933, pp. 341-42). Minsky posits that that the capitalistic economies are inherently unstable (Minsky, 1986) and due to innovation the financing structures transformed eventually results into depression. The most visible manifestation of financial fragility in an economy can be observed through the regular and persistent occurrence of several financial crises in the both advanced and emerging economies (discussed in detail in the 2nd chapter) during the last fifty years. Due to some domestic or

external shock, the economic structure become fragile and financial crisis (debt, currency or banking) takes place in an economy. This section identifies the most important factors that caused the financial fragility and the repeated occurrence of financial crisis in the last two decades, both in the AEs and the EMEs.

1.2. Main factors behind Instability/Fragility/ Recurrent Financial crisis

During the last thirty years, international financial markets have become enormously integrated. The post-WW II economic arrangements were based on the economic philosophy of free trade, laissez-faire capitalism, and neoliberal economic theories. This resulted into the deregulation of the financial markets (both in AEs and EMEs) accompanied by a complex financial innovation and financial globalisation. All these forces have played a central role in amplifying the probability of financial fragility and financial crisis in advanced and emerging economies. Analysing the causes of financial fragility in the Organisation for Economic Co-operation and Development (OECD) countries, Driscoll have maintained that, three potentially imperative sources of financial fragility can be identified; first is the growth of debt financing over the business cycle. Second important source is the reduced liquidity of corporations and financial institutions. Third, the change in institutional and regulatory structures associated with financial markets deregulation (Driscoll, 1991, p. 15). In a financial globalised and liberalised environment, the progressive liquidity requirements of financial structures make these institutes and markets fragile and prone to various types of financial crisis. The role of deregulation, financial innovation and financial globalisation is analysed and assed in the following.

1.2.1. De-Regulation of Financial Markets

Over the last thirty years, financial system has become more interwoven and complex due to the factors of the deregulation, liberalisation, and globalization of financial markets. These

changes overwhelmed the financial markets of the advanced economies and the emerging market economies both. Deregulation of domestic financial system has its roots in the neoliberal growth model which see that free markets are self-stabilizing and efficient. Deregulation was advocated as the best policy in the sphere of money, banking and finance; as Hayek (1976, p. 22) put it, "The best the state can do with respect to money is to provide a framework of legal rules within which the people can develop the monetary institutions that suit them best" (Dorn,1993, p. 155). It was also argued that "where banking was left most free to develop in response to the demand for its services, it produced the best results" (Cameron, 1972, p. 25). Therefore lifting controls and minimizing government intervention in the domestic banking sector and financial markets was considered the most appropriate policy since the 80s both in the United States and various emerging economies.

The painful experience of the "*Great Depression"* has altogether changed the attitudes of policy makers and authorities regarding the regulation of financial markets. The US Congress fundamentally reformed banking with the Glass-Steagall Act in 1933. This Act established a system of deposit insurance for the protection of consumers with the creation of the Federal Deposit Insurance Corporation (FDIC). This newly created body FDIC guaranteed the consumer deposits up to a certain level in a bid to mitigate the fears of bank failures. This institution played an important role in containing the massive bank runs during the "*Great Depression"*. The Glass-Steagall Act (The Bank Act of 1933) has made clear demarcations between the banking and non-banking activities and prohibited the banking firms from being "engaged principally" in non-banking activities, such as the securities or insurance business or investment management. New regulations were introduced in the securities markets in an attempt to ensure regulatory capture. Another significant legislation was the Securities Act of 1933 that required the businesses to register the initial offer or subsequent sale of any security

with the government, increasing disclosure and transparency in the primary securities market. Thus the reforms in the first half of the 20th century created a system of regulatory agencies keeping in view the type of activities the firms are engaged in. However most of the above mentioned regulatory rules were phased out or relaxed gradually and the Reagan administration[14] initiated a series of reforms during the 80s in a bid to free the financial markets from the government regulation. Later on president Clinton followed financial deregulation even more vigorously and several rules and regulatory changes were introduced to make US banking sector competitive both domestically and internationally. The famous Gramm-Leach-Bliley Act, 1999 was signed by US president Clinton and it repealed the various provision of the Glass-Steagall Act of 1933. The new act allowed the US banks and financial institutions more choices and competition in financial services (FDIC Review, 1998).

EMEs also followed the footsteps of the advanced economies and embarked upon the programs of financial reforms and deregulation of their financial markets (started in late 70s and Latin American countries were the pioneers). Various state controls were lifted and barriers between products, markets and countries were removed. The progressive elimination of barriers between different types of financial services providers, the removal of barriers of entry and the elimination of product restrictions have led to more competition in financial services industries (discussed in detail in the 3rd chapter). Foreign bank entry to demomestic markets was encouraged and EMEs saw an enormous number of foreign financial institutions operating in their domestic markets. This naturally led to an increase in cross-border provision in banking and capital markets services. But due to inadequate regulatory framework and institutional constraints, this hasty deregulation failed to generate positive competition.

[14] Similar policies were adopted in the UK by the Prime Minister Margaret Thatcher.

Banking sector problems increased in these economies after the deregulation e.g., for banking sector problems increased in Chile in 1981 shortly after the deregulation of the financial sector emerged shortly after the financial sector was deregulated (Diaz-Alejandro, 1985). EMEs become the destinations of establishing and speculative capital inflows and domestic financial institutors and markets become fragile and prone to crisis. It is not surprising that EMEs went through the Mexican currency and debt crisis, Asian currency crisis, Argentina and Brazilian financial crisis, Russian debt crisis. Lastly these economies could not shield off from the GFC of 2007 as well. All these examples show that how the international financial intermediation and global assets trading have made financial fragility, financial instability and financial crisis an international phenomenon (Driscoll, 1991).

1.2.2. Financial Innovation

Financial innovation is an integral part of deregulated financial markets. A wave of financial innovation started in 1960 in USA that spread around the globe and has changed/transformed the financial landscape of EMEs also (Levich, 1988). Generally, financial innovation comprised of those techniques and activities that modernize the finance, thus it encompasses new or transformed financial instruments, institutions, practices, and markets (Sánchez, 2010, p. 27).

Although, financial innovation may differ from country to country (or markets) but Levich et al. have identified some common features of the process of financial innovation. It includes (i) innovation-the development of new financial products and markets; (ii) securitization-a greater tendency toward market-determined interest rates and marketable financial instruments rather than bank loans; (iii) liberalisation-of domestic financial market practices either through explicit deregulation or a breaking down of conventions; (iv) globalisation-as national barriers erode and financial markets grow more integrated; and (v) increased

competition among financial institutions, with many of the traditional distinctions between commercial banks, investment banks, and securities firms becoming blurred in the process (Levich, 1988, p. 1). The incentive behind the process of financial innovation is quite strong and has its foundation in the market system. Forces of self-interest, profit maximization, risk optimization, and technological changes guide the steady process of the financial innovation process (Levich, 1988).

Deregulation of the financial markets and technological advancements have played a more vital role in the spread and depth of financial innovation. It is argued by the Dufey and Giddy (1981) that most financial innovations are result of two factors; it was either aimed at circumventing the existing government regulations or in a perception of risk changes in the markets. Todd (1993) has also argued that the pace and gains of financial innovation is determined by the laws that govern banking and finance and the approach taken toward regulation. Thus, broadly financial innovation is categorized in two groups. The first group consists of set products and services based on the technological advancements that have lowered the cost of acquiring and processing information and make financial transactions more efficient. Underwriting system, mobile banking, electronic trading platforms for foreign exchange, capital and derivatives products fall under this first group of financial innovation (US Congress Report, 2009). The second category of financial innovation refers to changes in market and regulatory conditions faced by economic agents. Abandonment of the Bretton Woods fixed exchange-rate system and high and volatile inflation rates of the 70s gave rise to credit products like Adjustable Rate Mortgages (ARMs), Foreign exchange (FX) and interest rate derivatives, futures, forwards, swaps and options. These new products were very visibly present in the advanced country financial markets in the pre-crisis 2007 and some of these are used by some EMEs also (Sánchez, 2010, p. 26).

Originally, financial innovation was introduced for positive purpose, but over the years it has actually created negative effects on the macro economy. It encourages the financial intermediaries to assume excessive risks (Palmerio, 2009). It is possible to assert theoretically that in the presence of incomplete markets, financial innovation is an instrument that gives operators a wider range of choice aiming to raises social welfare *à la* Pareto. However, it is observed that financial innovation diminishes the social welfare significantly when new financial assets/instruments are introduced in the markets (Elul, 1995) and is not a "*positive-sum game"* (Tufano, 2003). In a paper "*Financial Innovation and Financial Fragility*", Gennaioli *et al.* have offered a very vivid explanation of how financial innovation leads to financial crisis and argued that financial innovation is, by its nature, inherently and predictably dangerous (Gennaioli *et al.*, 2010). Although innovations have contributed to the deepening of financial markets but it has its limits and some specific innovations/ products can be source of financial instability leading the economy to financial crisis. Destabilising role of financial innovation and the newly created layered and complex instruments and securities are widely acknowledge in the build-up of 2007 subprime crisis in the United States (discussed in detail in the 2nd chapter).

Unrestrained financial innovation in US was the result of the combination of three important factors; financial deregulation, public policies toward credit markets, and broader technological change (Federal Reserve Report, 2010). Financial de-regulation phased out various regulatory restrictions on financial markets and allowed banks to extend their networks, thus the structure of financial markets evolved gradually. The Community Reinvestment Act of 1977 (CRA) allowed lenders to find ways of crediting loans to low income and moderate income consumers. US government took more steps to support for the development of secondary mortgage markets, particularly through the government-sponsored

enterprises, Fannie Mae and Freddie Mac (again housing loans were extended to the borrowers with weak repayment capacity and dubious credit histories). The repeal of Glass-Steagall Act of 1933 in 1999 effectively removed the separation between investment banking which issued securities and commercial banks which accepted deposits. All these developments in the financial markets and the polices of the US government gave lenders greater access and diversification in funding which eventually resulted in huge expansion into new markets and new products (Bernanke, 2009). Nevertheless, the combination of the deregulation and technological advancement led to significant changes in institutional market structures by creating more complexity and adding new risks.

1.2.3. Financial Globalisation (Financial Markets Liberalisation)

The third most important factor behind increased financial fragility and recurrent financial crisis is the phenomenon of financial globalisation and the liberalisation of the EMEs financial markets. Several scholars from the emerging economies believe that financial globalization accompanied by deregulation and liberalisation has created great instability and fragility since 80s and caused several crises in these countries (Girón and Correa, 1999, p. 1). Nonetheless, financial globalization and deeper integration of EMEs to the advanced financial markets entails the risk of greater financial market instability and or even the systemic fragility. Empirical research has established that premature financial liberalisation results in increased banking sector fragility (Demirgüç-Kunt and Detragiache, 1998). Furthermore massive capital inflows in the wake of financial liberalisation have caused financial crisis in EMEs (Prasad et al., 2003). The risk of sudden stops of capital inflows, existence of massive short-term debt denominated in hard currencies, currency mismatches have left several EMEs prone to speculative attacks.

The fundamental role of financial globalisation in the build-up of fragility and eruption of crisis is manifested by the Latin America's debt crisis 1982-83, Mexican Crisis 1994-95, East

Asian currency crisis of 1997-97 that engulfed the whole region and the Russian debt crisis 1998. Accumulation of short-term debt and asset price bubbles were at the centre of these crises (Lamfalussy, 2000). Pre-mature and hasty financial account opening poses a serious challenge in the environment of inadequate regulation and supervisory framework (Ishii and Habermeier, 2002; Bakker and Chapple, 2002). Financial liberalisation increased the probability of banking crisis in EMEs (Caprio and Summers, 1993; Hellman, Murdock and Stiglitz, 1994). Majority of the EMEs have institutional (and capacity) constraints and weak regulatory frameworks to handle with massive capital inflows or any contagion of shock from advanced economies. Thus capital inflows are channelled in firms with weak fundamentals and financial integration can lead to escalation of crisis (Goldstein and Turner, 1998; Mishkin, 1999; Krueger and Yoo, 2002; Feldstein, 2002; La Torre and Schmukler, 2005; Alexander, Dhumale and Eatwell, 2005; Bernanke, 2009). Increased integration of EMEs with international financial markets tends to increase the speed and magnitude of any external shocks. Real time contagion of the 2007 GFC to emerging economies is most pertinent example in this regard (discussed in detail in the 3rd chapter).

To sum the discussion, it is argued that the interplay of financial markets deregulation, financial innovation and the globalization/financial liberalisation have collectively frolic to increase financial fragility and probability of recurrent financial crisis. Although country specific conditions may have exacerbated the situation but various crisis examples from the EMEs and analysis of United States financial market clearly reveal the centrality of these three factors.

1.3. Post–World War II Financial Settings

Finance is one of the oldest professions in history. The origins of money and financial instruments can be traced back to thousands of years and are as old as history itself. However,

the modern settings of the financial system have its origin in the 11th century onwards when system of market economy in Western Europe re-emerged. Rise of modern state has also supported the process further and various credit instruments/products evolved gradually over the centuries with strong links to the state (Braudel, 1982). Many modern instruments of monetary policy and financial control had been developed by the end of 19th century (Germain, 1997; Helleiner, 1994; Knafo, 2006). That period also saw the rise of immensely powerful financial houses such as JP Morgan and the Rockefellers in the USA joining the already established powerful European financial houses such as Barings or Rothschild (Nesvetailova, 2007, p. 10). These large financial houses were truly dominating the core capitalist economies.

Rise of finance capital[15] (Hilferding, 1981) or bankers capitalism (Commons, 2003) is the attribute of the early 20th century. Hilferding has argued that the " most characteristic features of 'modern' capitalism are those processes of concentration which, on the one hand, 'eliminate free competition' through the formation of cartels and trusts, and on the other, bring bank and industrial capital into an ever more intimate relationship. Through this relationship...capital assumes the form of finance capital, its supreme and most abstract expression ... The progress of industrial concentration has been accompanied by an increasing coalescence between bank and industrial capital. This makes it imperative to undertake a study of the processes of concentration and the direction of their development and particularly their culmination in cartels and trusts. The hopes for the 'regulation of production', and hence for the continuance of the capitalist system, to which the growth of monopolies has given rise...requires an analysis of crises and their causes" (Hilferding, 1981, pp. 21-22)[16]. Largely unregulated,

[15] The term finance capital appears to come from Hilferding's 1910 book, which proclaimed a new stage of capitalism characterized by complex financial relations and domination of industry by finance.

[16] While the details of Hilferding's analysis seem to be applicable to very particular institutional arrangements that existed in Europe around the turn of the century, in a general sort of way one could argue that Veblen, Keynes, Schumpeter and, later, Minsky were analyzing this new stage of capitalism.

highly mobile and the politically powerful financial empires were the main features of this period. This period also witnessed one of the most famous financial booms in modern history of finance. Stock market rises in the USA during the 1920s was completely driven by the euphoria associated with the new technological advances, new financial instruments and post war macroeconomic recovery of the United States. The boom of the 1920s ended up with an infamous 'big bang'; the Wall Street crash of October 1929, followed by the great depression of the 1930s. In the aftermath of the Great Depression, an entirely new regime of financial regulation emerged; it was a system characterized by tight governmental control over capital flows within and between the nations, supported by a regime of fixed exchange rates. Thus the lessons learnt from the 1929 crash and the Great Depression were transformed into theories and institutions which led to the "30 glorious years of capitalism despite the fact that laissez-faire capitalism is intrinsically unstable (Bresser-Pereira, 2010, p. 6). In fact the World War II was quite instrumental in overcoming the woes of Great Depression. The Bretton Woods agreement of 1944 was crowned as a response to depression and resultantly a sophisticated system of financial regulation was steered. Thereafter the world experienced the golden age of capitalism, where the state intervened to induce economic growth (Bresser-Pereira, 2010). Andrew Shonfield's book "*Modern Capitalism"* remains the classic analysis of this period, it summarized three important points: First, economic growth has been much steadier than in the past, secondly, the growth of production over the period has been extremely rapid and thirdly, the benefits of the new prosperity were widely diffused (Shonfield, 1969, p. 61).

Immediate post-war II period is characterized by highly regulated financial structures, referred as the period of financial repression in the economic literature. Government through its policies has controls on the operation and functioning of private financial intermediation

(McKinnon, 1973; Shaw, 1973).These controls were at two levels; domestic and international. Domestic financial system and markets were controlled by interest rates ceilings, requirements for banks to hold government bonds to finance government budgets deficits , targeted credit schemes to support 'selective' industries high reserve requirements and foreign exchange rates were gold anchored. Internationally, this suppressed regime presents capital controls and strict restrictions to access the foreign financial markets (Korosteleva and Lawson, 2005). This system of controls and repression was governed under the Bretton Woods international agreements and a noteworthy feature of this period is that the system functioned without any severe financial crisis or volatility for almost a quarter of century (1944-1971). The spectacular tranquility of the Bretton Woods system was associated primarily with financial stability, high growth rates in major capitalist economies and the general social and economic wellbeing of the population was greatly attributed to the adoption of Keynesian polices. Owing to these features, this era is sometimes referred as the golden age of capitalism. But these golden years soon ended when Bretton Woods System was abandoned during the 1971-73 and a wave of deregulation of domestic financial markets and liberalisation of international finance was sought and advocated as source of fast economic growth. Successful policy response to the stagflation, in the 1970s and the deregulated banking system and financial markets of the 1980s has reshaped the fundamental workings of global economy. The afterward period is dominated by the finance.

1.4. Ascendance of "Money Manager Capitalism "and Financialization as Global System

Since the deregulation and liberalisation drives, the capitalism have gone a long way and underwent a huge transformation. Nonetheless, this finance-led capitalism has spread around the globe with its relentless logic of free-market regulation and reached the zenith of financialization and money manager capitalism. Some heterodox economists have termed it as

"patrimonial capitalism" (Aglietta, 1998)[17], "finance-led growth regime" (Boyer, 2000), or "finance-dominated accumulation regime" (Stockhammer, 2007) which is driven by finance (Tabb, 2007). Minsky has referred it as "Money manager capitalism" and his "Financial Instability Hypothesis" provides an understanding of money manager capitalism and its collapse (Bellofiore, 2011, p. 6 and p. 13). It is also described as "financialization" "casino capitalism," or even as the "neoliberalism". Epstein has defined financialization as "the increasing role of financial motives, financial markets, financial actors and financial institutions in the operations of the domestic and international economies" (Epstein, 2005, p. 3). According to Palley, "financialization is a process whereby financial markets, financial institutions, and financial elites gain greater influence over economic policy and economic outcomes. Financialization transforms the functioning of economic systems at both the macro and micro levels" (Palley, 2007, p. 2).

Money-manager capitalism is a reality of the 1980s in the United States, when institutional investors began to exert their influence on financial markets with the sole aim of maximizing the value of the investments of the fund holders. Since then global financial system has slowly realigned toward "money manager capitalism" (Wray, 2011). This led the business leaders to become increasingly sensitive to short-term profits and the stock-market valuation of their firm. Thus the money managers were the masters of the private economy (Whalen, 1999, p. 6). (Various stages of capitalist development are summarized in the Annexure 1).

The concept of money manager capitalism has some peculiar features; huge pools of funds (pension funds, sovereign wealth funds, hedge funds, university endowments, corporate treasuries) are established under management by professionals and managers are assigned the

[17]According to Aglietta (1998; 2005), the main characteristics of 'patrimonial capitalism' are the extension of employee shareholding; the importance of institutional investors in corporate governance; and the new role played by financial markets in national macroeconomic adjustments. This is why he proposes the term 'patrimonial' to define the contemporary world economy: 'The denomination `patrimonial regime´ makes reference to the predominant role played by capital markets, which configure the wealth of households in the determination of macroeconomic balances. It also designates the extension of employee shareholding through the importance acquired by institutional investors in corporate financing and governance, becoming an essential instance of the regulation of this growth regime' (Aglietta, 1998, p. 14).

task to earn maximum profits by beating the average return to retain clients. This environment, with no government regulation and oversight is very conducive to the excessive risk taking and finally ending in financial crisis like situation. Dominant feature of this system of finance is known as financialization explained above. Minsky in his writings has rightfuly argued that the post-war II period has seen a gradual transformation of the economy from a "robust" structure to one that is "fragile" with the money manager capitalism as its inevitable feature. Minsky believe that finance capitalism collapsed in the Great Depression and emerged a new stage of capitalism (money managers). Minsky has truly noted that due to globalization, securitization has promoted, which has spurred the banking model to shift from "originate to hold" to "originate to distribute[18]." Under this system, banks' profits are not coming from traditional functions; rather banks now maximize fees and commissions by issuing and managing assets in the off-balance-sheet structures. It naturally makes bankers less interested in credit evaluation and this most important task is delegated to the (with a conflict of interest[19]) to credit rating agencies (Kregel, 2008).

The complexity of the modern credit, internal workings of the financial markets, transformation of finance and its ascendance as global system is not easy task to understand and analyze. First reason is its basis in the mainstream macroeconomic theory. Analysis of the transformation of the finance has theoretical foundations in the dominant neoclassical economics and methodological individualism. Second important reason is, with all advancement in the financial deregulation , privatization and liberalisation of international financial markets, it is obvious today that financial variables and dynamics are determined

[18]In the traditional model of banking, historically banks used deposits to fund loans that they then kept on their balance sheets until maturity. But this traditional model of banking has changed over the years and in the so-called 'originate and distribute' model, banks do not hold the loans they originate but repackage and securities them.

[19] A conflict of interest occurs when an individual or organization is involved in multiple interests, one of which could *possibly* corrupt the motivation for an act in another.

not by economic fundamentals (Eatwell and Taylor, 1999) but by arbitrage opportunities and investor's confidence about it. To better understand the complexity of these issues, it's very important to analyses its theoretical foundation. Therefore, next section presents a theoretical review of two prominent schools of macroeconomic theory.

Section 2: Financial Crisis and the Macroeconomic Theory

> *"The financial crisis that is spreading out from countries with the most 'advanced' financial systems to the rest of the world has not been well served by economic theory",* **JAN TOPOROWSKI, 2010**

The possibility that the financial system might be a source of instability leading to financial crisis has regularly discussed in pre-Keynesian business cycle literature. However, post war business cycle literature has generally neglected the role of banking and the overall financial system as a source of instability. Although, the role of monetary factors (money supply or monetary shocks. See Lucas, 1975) have been analyzed. The global financial crisis of 2007 has reinvigorated the motivation and the research interests into the sources of financial crisis. Economic theory about the possible explanation of financial fragility/crisis can be designated into two broad traditions. One tradition uses orthodox theory to uncover the sources and causes of financial crisis and second strand of research seeks to find heterodox approach or the historical analysis beneficial for the explanation. Orthodox approach is also sometimes referred as the mainstream economic approach. Main pillar of the orthodoxy were Milton Friedman's "Monetarism"; and New-classical economics as pioneered by Robert Lucas and this school believe in the efficacy of market mechanisms (self-correcting mechanism of market) as the regulators of economic life. Nevertheless, the neoclassical macroeconomics provided the neoliberal ideology with a scientific foundation. On the other hand, the heterodox approach sees the financial crisis as an endogenous to the financial system and do not believe in the self-correction of market mechanism. Fisher (1933), Minsky (1977, 1982,

and 1986) and Kindleberger (1978) have made commendable contribution about the development of financial crisis and fragility and have influenced the macroeconomic thinking. Post-Keynesian theoretical insights (Minksy and Kindleberger) have emphasized the role of uncertainty and the importance historical process in the understanding of financial crisis. These two competing schools about crisis and fragility are discussed in detail in the following.

2.1. Review of Theoretical Approaches about Financial Crisis/Financial Fragility

On the question of the financial crisis, the economic literature can be split into two polar camps, first associated with monetarists; the second and a more eclectic view is put forward by Charles Kindleberger and Hyman Minsky. Monetarists beginning with Friedman and Schwartz (1963) have linked financial crisis with banking panics. They have analysed the US banking and financial system quite deeply and view the bank panics as a major source of contractions in the money supply which, in turn, have led to severe contractions in aggregate economic activity in the US. It is argued that monetarist's school myopic insights are unable to vision real financial crisis events in which, despite a sharp decline in asset prices and a rise in business failures, they believe that there is no potential for any bank panic and thus no possibility of any sharp decline in the money supply. Therefore, Schwartz (1986) has characterized such situations as 'pseudo financial crisis'. So according to her proposition, any kind of government intervention in the situation of a '*pseudo-financial crisis'* is unnecessary and is considered harmful for the financial system and economy. And even then if government intervenes, such interventions can cause a decrease in economic efficiency because inefficient firms which need to fail are bailed by the government and results in excessive money growth that stimulates inflation.

Contrary to the monetarists view, Kindleberger (1978) and Minsky (1972) have outlined an alternative approach towards financial crisis. Kindleberger and Minsky have much broader concept and definition of financial crisis that distinguished this approach from the

monetarists. According to their view, financial crisis either involve sharp declines in asset prices, failures of large financial and nonfinancial firms, deflations or disinflations, disruptions in foreign exchange markets, or some combination of all of these results in a situation referred financial crisis. However, critics of Kindleberger-Minsky paradigm argued that this view of financial crisis does not offer a rigorous theory of what characterizes a financial crisis, and it thus lends itself to being used too broadly as a justification for government interventions that might not be beneficial for the economy. This is the basic reason of Schwartz's (1986) criticism on the Kindleberger-Minsky view of financial crisis. Nonetheless, monetarist view of financial crisis is extremely narrow and limited which sees the bank panics as the only possibility of crisis and the effects of these bank panics on the money supply (Mishkin, 1991, p. 2). With this brief background, in the following section, the orthodox and heterodox theories of financial crisis are reviewed and compared with emphasis on their genesis to understand the working of capitalistic economies and financial markets. This analysis is important to highlight the distinct contribution of these theories to the question of financial crisis, instability, fragility and role of policy to contain these tendencies.

2.2. An Orthodox Theory/Approach of Financial Crisis

A long-standing tradition in the history of economic thought, persisted through the Classical[20], Neoclassical, and Neoclassical Synthesis schools claims that markets in general, and financial markets in particular, are self-stabilizing (self-correcting). At the core of this proposition lies the believe that the market price of any given commodity on any given day have no tendency at all to deviate from its natural price for any significant period of time (Prasch, 2010, p. 2). According to the neoclassical vision, financial turbulence is an exception so there is no possibility of financial crisis until there is some disturbance from outside the system. The neoclassical school of thought has a complete (blind) faith in the working of

[20] Classical economic theory is at times referred also as the theory of efficient markets, neoclassical theory or mainstream economic theory or the orthodox macroeconomic theory.

"*invisible hand"* of the price mechanism. According to this "invisible hand" approach price system is fundamental in the working of markets and the natural price is the centre of gravity for all the prices of commodities bought and sold. Due to some artificial disruptions or some accidental events, it might be a possibility that prices of commodities remained suspended a good deal above or sometimes below it but despite all these obstacles and hurdles working to hinder the prices of commodities to settle in this environment of repose and continuance, actually the prices of commodities are constantly tending towards the natural price (Smith, [1776] 1904, p. 58). Thus, according to this school of thought, free markets are the panacea for all problems and the government's interventions in the financial markets is always a source of instability. The root cause of any instability and inefficiency is thus the "impurities" that hinders markets to operate smoothly (Iwai, 2011, p. 2). Stated otherwise, interventionist's government's policy is the problem while free market is the solution. Hence the logical deductions of classical theory results in a system of "*laissez faire" where* government should never interfere with the smooth operations of the free market economy (Davidson, 2009, p. 29). That's why it is not surprising that Adam Smith believes that a gradually removal of tariffs and taxes to minimize disruptions in the domestic financial markets is necessary.

Modern champion of this school of thought and believer in the invisible hand and neoclassical view of capitalistic markets is Milton Friedman (discussed in detail in next subsection). Thus the Neoclassical tradition believes that relative interest rates have the ability to manage any anomaly in the markets, therefore interest rates and asset prices are the guiding force of the efficient working of the financial markets. In the same vein, neoclassical tradition sees relative wages guide the labor markets. The balance of trade is assured by changes in the exchange rate. If any component of this smooth system of flexible and adaptable markets is not in balance at any given moment, the discrepancy is explained by an appeal to the

existence of "*government interference*," "*exogenous shocks*," or "*adjustment lags*" (Prasch, 2009, p. 3). Basically, orthodox theory builds upon the foundation of "Walrasian General Equilibrium" wherein markets offer a fully optimal settings for exchange and the agents of the markets have perfect information and they can identify various choices quite optimally that can maximize their welfare. Modern proponents of orthodox school encourage the new financial institutions and new financial products; encourage the risk taking for a higher volume and efficient allocation of liquidity within the financial markets in a bid to higher investments resulting eventually in higher economic growth. After this brief background of traditional approach, monetarists approach towards financial crisis is debated in the below.

2.2.1. The Monetarist Approach towards Financial Crisis

> *"[T]he Great Depression, like most other periods of severe unemployment, was produced by government mismanagement rather than by any inherent instability of the private economy*", **(FRIEDMAN, 1962, p. 38)**

Monetarism may be defined as the collection of *neoclassical* theories linking money with prices, output and employment (Maanen, 2003, p. 21). Milton Friedman and his followers promoted monetarism as an alternative to Keynesian economic theories and later on became influential in the 1970s and early 1980s policy making. Monetarism holds that a change in the money supply directly affects and determines the price levels. Fundamental to the monetarist approach is the rejection of fiscal policy in favour of "monetary rule", in an assertion that fiscal measures have little significant effect on the fluctuations of the business cycle. Monetarists strongly believe that government intervention in the economy should be kept to a minimum. Based on this ideological ground, 20th century financial markets and policy makers followed the Milton Friedman's monetarism. Monetarism is an economic policy based on the theoretical belief in the efficiency of free market forces that gives priority to achieving price stability by the tools of monetary policy. Friedman and Schwartz have re-interpreted the

experience of the 1930s and devoted considerable attention to the role of banking panics in producing monetary instability in the United States in their seminal work "*A Monetary History of the United States, 1867-1960*", published in 1963. Friedman and Schwartz (1963) advocate the view that bank failures are the result of unwarranted panics and their studies of various bank crisis show that most of the failures were due lack of liquidity; particularly the banking panics of 1930-31 in United States were largely the consequence of illiquidity. According to Friedman and Schwartz, bank panics are important because of their effects on the money supply and consequently the economic activity. They have studies the hundred years of US financial history and showed that the United States went through six severe contractions of its history and the distinguished feature of these contractions was the major banking and monetary disturbances (Friedman and Schwartz, l963, p. 677). Nonetheless, the bank panics "have greatly intensified (severe) contractions if indeed they have not been the primary factor converting what would otherwise have been mild contractions into severe ones" (1963, pp. 441-442). Friedman and Schwartz postulate that bank panics are the result of the public's loss of confidence about the banks' ability of converting deposits into currency; nonetheless, the loss of confidence is augmented by the failure of several key and important banking institutions as it was happened in 1873 and 1893. In a fractional reserve system of banking, any attempts by the public authorities to increase their fraction of money holdings is only realised with multiple contraction of deposits. Attempts by the public to increase the fraction of its money holdings held in currency in a fractional reserve banking system can only be met by a multiple contraction of deposits. Consequently, a panic occurs which, in the absence of monetary authorities' intervention, leads to massive bank failures throughout the financial system. In this panic environment, the otherwise sound banks failed because they are forced into insolvency due to fall in the value of their asset holdings induced by shortage of liquidity. Several bank failures during the period 1929-33 were resulted due to

reduced money stock by a decline in the deposit/currency and deposits/reserve ratios, ultimately damaging the economic activity.

Besides highlighting the bank panics of 1930, Friedman and Schwartz have mentioned some other important episodes but according to them from macroeconomic point of view crisis in 1930 and 1931 are more important. An important aspect of the Friedman and Schwartz work is that they have distinguished the arithmetic and the economic aspects of a banking panic. While deliberating the bank panics of 1893, they wrote "the panic had important effects on the banking structure, and it undoubtedly affected the detailed timing, form, and impact of the economic adjustment. At the same time, it was at bottom simply the way in which an adjustment, forced by other considerations, worked itself out. The price declines abroad and the distrust of the maintenance of the gold standard by the United States meant that there were only two alternatives: (1) a sizable decline in U.S. prices and a decline or a reduced rate of rise in money income; or (2) the abandonment of the gold standard and the depreciation of the dollar relative to other currencies. Given the maintenance of the gold standard, the adjustments in prices and income were unavoidable. If they had not occurred through the banking panic and the accompanying deepening of the recession underway, they would have taken place in some other way" (Friedman and Schwartz, 1963, pp. 110-111).

However the aforementioned vulnerabilities of the US fractional reserve banking system was ended with the establishment of the Federal Deposit Insurance (FDIC) in 1934 which helped to eliminate public's fear about its disability to convert deposits into currency. Friedman and Schwartz blamed Federal Reserve to share the responsibility of various bank panics and they believe that if Federal Reserve have had conducted open market operations in 1930 and 1931 to inject liquidity in the banking system, the series of banks defaults could be halted and

also the resulting decline in the money stock. According to them, the Federal Reserve failed to play its proper role as lender of last resort (as it was established to be in the Federal Reserve Act of 1913) otherwise it could be able to offset the effects of the banking panics on the money stock and prevented the Great Contraction. Therefore, they argue that Federal Reserve's errors of commission and omission were instrumental in causing the economic collapse and Great Depression.

Elaborating the international aspects of the banks crisis, Friedman and Schwartz postulates that international spread of economic distress resulting from the U.S. monetary contraction in 1929-33 spread through the gold exchange standard. The countries like China and Spain have flexible exchange rates with the United States, so do they escape the fall out. Friedman and Schwartz (1963) recognized that interlink ages between the banking sector and the real sector obscure the arguments about causality: " the decline in the stock of money and the near-collapse of the banking system can be regarded as a consequence of nonmonetary forces in the United States, and monetary and nonmonetary forces in the rest of the world. Everything depends on how much is taken as given" (pp. 300-301).

Another seminal work with monetarist account of crisis is given by Cagan (1965) in *"Determinants and Effects of Changes in the Stock of Money*" over the period 1875-1960. He has carefully analysed the role of banking panics in the cyclical behaviour of the economic contraction. Cagan has elucidated bank panics and failure of important financial institutions and rail road networks in the USA. According to him massive failures of banking institutions are direct result of the United States experience "to the pre-World War I banking system with its inverted pyramid of credit resting on New York City banks and the absence of emergency reserves provided by a central bank and to "sharp outflows of gold which sometimes forced

banks to contract credit too fast" (Cagan, 1965, pp. 226-227). Cagan also presented a strong evidence to argue that US bank panics did not precipitate cyclical downturns because all of followed peaks in economic activity. Furthermore, bank panics were instrumental in the various cycles in decreasing the money growth very significantly but he believes that banks panic were not the sufficient to produce a severe contraction in the US economy. He build up this arguments by observing the bank panics between the period 1920-21 and 1937-38, besides this, he has also observed the two mild cyclical downturns that were associated with panics in 1890 and 1914.

2.2.2. Asymmetric Information, Moral Hazard and Random Selection

Within the broader contours of the mainstream theoretical school, a significant contribution on the question of financial crisis is attributed to Mishkin (1992). His asymmetric information, moral hazard and random selection paradigm gave an insightful understanding of the dynamics of financial crisis. Mishkin assumes that asymmetric information is precisely one of the reasons of the financial crisis, being based on the fragility of the structure of debts that are used for speculation. He has explained in detail the mechanism of asymmetric information and resulting problems of moral hazard. He termed financial crisis as a disruption to financial markets in which adverse selection and moral hazard problems become much worse, so that financial markets are unable to efficiently channel funds to those who have the most productive investment opportunities. According to him, five factors in the economic environment can lead to substantial worsening of adverse selection and moral hazard in financial markets, which then cause a financial crisis. The factors are: (1) increases in interest rates, (2) stock market declines, (3) increases in uncertainty, (4) bank panics, and (5) unanticipated declines in the aggregate price level (Mishkin, 1991, pp. 7-8).

2.3. The Heterodox Approach (Debt and Financial Fragility View) of Financial Crisis

Mainstream macroeconomic theory has neglected the issue of financial crisis. However heterodox school is not to blame in this regard. The works by Marx, Keynes, Kalecki, Fisher, Minsky, Leijonhufvud and Kindleberger are few influential names to mention who have highlighted the inherent instability of capitalist economies and their propensity to crisis (Frenkel and Rapetti, 2009). The heterodox theory of financial crisis relates financial instability directly to business cycle turning points, regarding crisis and contractions in economic activity as inevitable consequences of the excesses of economic booms. The business cycle upturns provide new, profitable investment opportunities in key sectors of the economy leading towards a boom (Bordo and Wheelock, 1998, p. 45). Minsky (1972) and Kindleberger (1978) are two prominent heterodox analysts who have argued that financial crisis either involve sharp declines in asset prices, failures of large financial and nonfinancial firms (or both), deflations or disinflations, disruptions in foreign exchange markets, or some combination of all of these. Nonetheless, both Minsky (1982) and Kindleberger basically extended the views of Irving Fisher expressed in booms and depressions. Besides these two, some other Modern proponents of this *financial fragility* view include Kaufman (1986) and King (1994), who extend arguments made by Fisher (1932 and 1933).

As mentioned above, the heterodox school of thought have had a long-standing of having a critical attitude towards mainstream macroeconomic theory but more recently several influential academics expressed their dissatisfaction too with the mainstream school; Robert Solow (2008), George Akerloff and Robert Shiller (2009), Willem Buiter (2009), Paul Krugman (2009) and Rodrik (2009) are few noteworthy to mention here and their ideas and explanations were received serious attention after the events resulting in the global financial meltdown of 2007. After the 2007 GFC, some prominent scholars in Post-Keynesian tradition

like Kregel (2007), Chick (2008), Dow (2008), Wray (2008, 2009), Lawson (2009), Davidson (2009) have very forthrightly denounced the scantiness of the mainstream models to explain the origins, nature and effects of financial crisis. In the following section we have highlighted very briefly some representatives of heterodox school and concentrated on the work of Minsky in bit detail.

2.3.1. Irving Fisher (Debt-Deflation)

In his seminal article "*The Debt-Deflation Theory of Great Depressions"*, published in 1933, Fisher has offered a very different and innovative view about contraction in economic activity and depression which is known as debt deflation theory. The crux of this theory is an interactive process whereby falling commodity prices results in increased debt burden of the borrowers. His analysis focused on the meltdown of the financial markets, shocking impact of a downward spiral closely connected the deflation of assets and goods prices. He believes that the process of deleveraging by the households and firms drives a contraction in economy activity and leads to sever depression. According to his view (1932, 1933) business cycle can be explained by two important factors; first is indebtedness and second is deflation. Therefore "Disturbances in these two factors--debt and the purchasing power of the monetary unit-- will set up serious disturbances in all, or nearly all, other economic variables. On the other hand, if debt and deflation are absent, other disturbances are powerless to bring on crisis comparable in severity to those of 1837, 1873, or 1929-33" (Fisher, 1933, p. 341). Although role of other factors is also important but debt- deflation are the ultimate causes of depression. in his own words *"*…in the great booms and depressions, each of the above named factors (over production, under consumption, over capacity, price dislocation, over confidence, over investment, over saving etc.) have played a subordinate role as compared with two dominant factors, namely, over indebtedness to start with and deflation following soon after;… where

any of the other factors do become conspicuous, they are often merely effects or symptoms of these two" (Fisher, 1933, p. 341).

Fisher posits that, some exogenous shock or event triggered the upswing of the cycle where new and profitable opportunities of investments appear due to new inventions, gold discoveries or even wars. Now any of these exogenous events stimulates new investment in sectors exhibiting higher output and higher prices. A circle is set in motion as rising prices raised the profits even more by inducing speculative investments for the capital gain but this whole process is debt financed, primarily by bank loans, which in turn by increasing deposits and the money supply raises the price level. Optimism about more profits prevails and the general environment happens to raise the velocity by fuelling the expansion further and fast. Furthermore amplified borrowings are encouraged because the every rising price level decreases the real value of outstanding debt more than the increase in nominal debt. This process continues uninterrupted until it reaches the general state of "*over indebtedness"* is reached (Fisher, 1932, p. 9). It is a state or situation when households, firms, and banks have insufficient liquid assets to meet their debt obligation or liabilities. This atmosphere is very conducive for the eruption of crisis as crisis can trigger by any errors in judgment by debtors or creditors. Debtors cannot pay back their debts when due and their inability to refinance their financial positions may be forced by creditors to liquidate their assets. Distress selling ensues and if it is widespread a "liquidity crisis" is triggered that has the possibilities to transform into a debt crisis, banking crisis and the deep depression. The process is unstoppable until there is some intervention by the monetary authorities is sought to restrain it. To sum up, it can be argued that Fisher's explanation of debt-deflation seems appealing because he sees the unwinding of excessive leverage as the driving force of a depression, contrary to other theories that see it as an outcome **(**Mendoza, 2009).

2.3.2. Minsky's Interpretation of "Euphoric Economy": Evolution of Financial Structure from Hedge to Speculative and Ponzi

Minsky's initial intellectual fundamentals were based on Schumpeter's inherently cyclical and monetary vision of capitalism (Schumpeter, 1928), and Irving Fisher's "*Debt-Deflation*" explanation of the Great Depression (Fisher, 1933). The core of Minsky's thought is extensively analyzed by Bellofiore and Ferri (2001), Fazzari and Papadimitriou (1992), Dimsky and Pollin (1992, 1994), Papadimitriou and Wray (1998) and Bellofiore (2009) who centered on the systemic buildup of instability or fragility in the financial markets. Nevertheless, Keynes (expectations formations under uncertainty) is the fundamental reference for Minsky work on on financial fragility, instability or financial crisis and Minsky termed it in Keynesian fashion as "euphoric economy" (Minsky, 1986, p. 237). He has elucidated it like "unrealistic euphoric expectations with respect to costs, markets, and their development over time" (Minsky, 1986, p. 233). It is an interpretation of Keynes's theory of investment focusing on the role of financial markets, the endogeneity[21] and non-neutrality of money and the role of financial institutions[22] . The most accomplished outcome of his insights is the *Financial Instability Hypotheses* (FIH) which postulates that after a period of '*tranquil'* growth and robust finance, firm's liability structures tend to shift towards fragility. According to FIH, economic system is prone to crisis because of the normal functioning of capitalistic society. Accordingly, economy goes through various transitory stages pushed by the internal financial developments of its structures. Therefore capitalist cyclical evolution - from expansion to the boom, financial collapse and the risk of a debt deflation, possibly leading to a great depression - is, once again, the necessary outcome of the monetary nature of the capitalist process. Minsky has very clear view about the "endogenous"

[21]

[22] Two types of institutional agents exert a crucial influence on the dynamics of market economies; firstly financial institutions (especially commercial banks) and secondly public authorities (Central bank and government).

nature of the capitalist evolution which is driven by the behaviour of financial variables. This is also referred as the most original side of Minsky's legacy (Bellofiore, 2009) (FIH is discussed in detail in the next section). Let see how economic structure evolves from stable to fragile state.

Let's explain the evolution of financial structure from *hedge* to *speculative* and *Ponzi*; according to Minsky economy goes throgh a predictable cycle includding bubbles. Thes cycles are attached with the type of the financiang involved are known as *hedge*, *speculative*, and *Ponzi*. Hedge financing is a situation when firms expect reasonable cash flows from the investments to oblige their contractual payments today and in the future. Speculative financing occurs when firm's expected cash flows fall short of contractual payments in the short run however firms are able to meet interest payments obligations and this stage of speculative financing involves the rolling over of maturing debt. The third stage of the cycle is Ponzi financing and it's similar like the speculative financing but it involves the equivalent of negative amortization. For Ponzi firms, essentially, outstanding debt increased and the borrowers involved in speculative and Ponzi financing expect to make their payments on debts to be met by refinancing, increasing debts, or even liquidate other assets of the firms (Minsky, 1992, 1986)**.**

Minsky argued that "The mixture of hedge, speculative, and Ponzi finance in an economy is a major determinant of its stability. The existence of a large component of positions financed in a speculative or a Ponzi manner is necessary for financial instability" (Minsky, 1986, p. 233). The *financial instability hypothesis* does not rely on exogenous shocks to generate a business cycle (Minsky, 1992, p.9). By 'shock', Minsky means is rise in interest rates which is not a policy decision but an endogenous factor, private response in an anticipation that payments

commitments implied by the debt structure of investment approach the cash flow, “the larger the dependence upon speculative and Ponzi finance, the greater the likelihood that a sharp run up in the short- term interest rates will occur” (Minsky, 1992, p 387).

In the expansion phase of buiness cycle, financial instituions, banks become increasingly innovative and use new products and instrumenets of financing and investemenets, with the upphase of business cycle, their boosted leveregse and project financiang led to a situataion of augmeneted risk. He has very rightly ponited about the perils of uncheked financial innovataion, “over an expansion, new financial instruments and new ways of financing activity develop. Typically, defects of the new ways and the new institutions are revealed when the crunch comes” (Minsky, 1986 p. 281). Impressed by the Fisher’s explanation, Minsky attached great importance to the role of debt structures in causing financial difficulties. He has particularly highlighted role of debt contracted to leverage the acquisition of speculative assets for subsequent resale in the markets. To sum up the argument, it is stated that persistent fluctuations are generated in the economy due to interaction of financial and real sectors and this situation is very desirable for the generation of a *à la Ponzi* behaviour where financial instability takes place.

2.3.3. Kindleberger (from Displacements to Financial Distress)

Kindleberger's influential and historical narrative about the nature of economic crisis is eloquently discussed in his classic “*Manias, panics and crashes: a history of financial crisis”* published in 1978. He views that Keynesian and Monetarist theories are incomplete because they leave out "the instability of expectations, speculation, and credit and the role of leveraged speculation in various assets" (Kindleberger, 1978, p. 18).

Building up on Minsky's framework, Kindleberger has thoroughly analyzed and argued about the nature of financial crisis in a capitalist system/market based economies and postulates that each financial crisis has some common characteristics. Thus he rejects the view that financial crisis are unique in nature. As we have seen in the work of Minsky's some earlier analysis, crisis starts with a shock or some displacement to the macroeconomic system, and Kindleberger has tried to identify some historical examples of such displacements. Let's briefly revise the various stages of crisis according to Kindleberger. Firstly, some exogenous shock (policy change, technological/scientific inventions, financial innovation etc.) occurs. Secondly, after the shock a boom is created through new profit opportunities nourished by increasing money supply. Thirdly, the boom leads to speculation (speculators make exorbitant money, as Adam Smith called it "*overtrading*"). Fourthly, the overtrading spreads from one market to another. Fifthly, speculation transmits internationally. Sixth, at the peak some insiders leave the market, there is an environment of "financial distress" and a bankruptcy everywhere (Kindleberger, 1978, p. 5). According to Kindleberger, economic crisis are caused by psychological mechanisms which lead asset prices to be volatile and combined with a fragile banks credit system.

Kindleberger does see the role of financial markets behind the creation of circumstances in which irrationality can take over; however he regards those markets as generally efficient but often in need of some intervention or support. His view is entirely distinct both from the free marketers who regard markets as always rational and efficient and the hyper-regulators who believe that markets work badly most of the time and need intense government oversight always. Another most important aspect of Kindleberger narrative of financial crisis is his recognition of the irrationality of human beings and the power of innovation, particularly financial innovation, in inducing people get themselves into real trouble. According to his

historical analysis, it is clear that financial crisis do not just come out of thin air. They evolve from a series of changes in events or circumstances that alter the course of economic activity and at the same time create the foundation for changed expectations—a process that is referred to as *displacement*. These changed circumstances may be a series of wars or crop failures that foster a pattern of lowered expectations **(**Mullineux, 2011, pp. 85-88). According to his findings, the sources of displacements can vary from one speculative boom to other and each speculative boom results in altering the profit opportunities in some sector of the economy. As investors and business are switched from an unprofitable to profitable venture, new entrants arrive to exploit these high profit opportunities and all this leads to displacements. Euphoria develops if this process leads to a net increase in production of bank credit which augmented the money supply and if urge for the speculation is also there, the overtrading and excessive gearing is inevitable. It is important to specify here that for the international transmission or contagion of the crisis, Kindleberger sees a flexible exchange rate as an important conduit. According to him, exchange appreciation/depreciation and inflation/deflation are associated with bankruptcies, bank suspensions and changes in the money supply" (p. 119). Finally, on the policy front, like Fisher and Minsky, Kindleberger also calls for a role of central bank with to a "lender-of-last-resort" to terminate the crisis, however he emphasized the international nature of financial crisis and advocates the requirement for an international lender of last resort (Bordo, 1985, pp. 13-14).

2.4. Comparative Analysis and Relative Superiority of the Heterodox Approach

The two main theoretical approaches with their underpinnings about the development of fragility and financial crisis are synthesized and reviewed above. The mainstream school of thought dominated by the monetary view believe that changes in the monetary aggregates are the primary conduit of the propagation of financial crisis and its spill over on the real economy. Thus, the orthodox school views that a reduction in money growth has significant

impact on economic activity and for the monetarists, financial crisis means essentially the bank failures. Contrary to this mainstream view, there is heterodox explanation of the crisis which presumed that financial crises are independent from the effects on money supply. According to the orthodox view, financial crisis has an exogenous trigger while heterodox believe it as endogenous to the financial system.

Contagion or the international transmission of financial crisis is another related issue on which both schools of thought have dissimilar views. According to the monetarist approach, transmission should occur primarily via the monetary standard by precipitating gold flows (or changes in international reserves) between countries that affect monetary bases and hence money supplies and if economy is operating under flexible exchange rates, the transmission would be muted. By contrast, Kindleberger and Minsky approach posits that transmission is possible through various channels and monetary channel is one of these. So according to Kindleberger and Minsky approach, one key channel of transmission can be the direct link between the banking systems of different countries. Furthermore, flexible exchange rates can also accelerate the transmission of the crisis (Bordo, 1985, pp. 13-14).

Besides the above stated differences, we can find some common observation in both school of thought and can combine these to have a more informed synthesis of the issue of financial crisis. Both agree about the destabilising consequences of the crisis on the real economy. However, at times Kindleberger and Minsky view is criticized in its failure to provide a rigours theory that characterise a financial crisis in capitalist economy. Thus, it seems that within heterodox approach, the Kindleberger and Minsky approach only describes the propagation mechanism and a broader justification of financial crisis for the massive government interventions; understandably, Schwartz's (1986) severely criticized the

Kindleberger and Minsky view. While on the contrast, orthodox views the government intervention as the source of problem of financial crisis and instability and advocates the minimum government role in the working of financial markets.

Role of monetary policy is another fundamental issue of difference between the two approaches. Monetarists have argued that crisis are triggered by exogenous monetary shocks while the financial fragility view (debt–deflation approach) and Minskys FIH postulates that financial system is inherently unstable and that crisis arise mainly because a euphoric business cycle encourage speculative lending and borrowings which sow the seeds of economic collapse. Nonetheless, Fractional-reserve banking system holds a key in the propagation of crisis and deflation in the both of monetarists and financial fragility (debt–deflation approach) views (Bordo and Wheelock, 1998, p. 45)**.**

It is argued that novelty with the analysis of Minsky lies in his linking the investment with debt within a historical framework and institutional facets of his analysis. Quite well known, Minsky's theory of endogenous and financial instability is mainly based on his "financial theory of investment" which is founded on the 'two-price' approach. Accordingly, "There are really two systems of prices in a capitalist economy – one for current output and the other for capital assets. When the price level of capital assets is high relative to the price level of current output, conditions are favorable for investment; when the price level of capital assets is low relative to the price level of current output, then conditions are not favorable for investment, and a recession – or a depression – is indicated" (Minsky, 1986, p. 143).

His analytical framework very strongly emphasized the role of financial factors in the development of instability. He completely realized that mainstream economic theory is

inadequate to explain the issue of fragility and thus he attempted to build an economic theory which is relevant to a financially sophisticated capitalist economy (Minsky, 1977). He fully understood the havocs of unrestrained financial innovation can create on the real economy and argued that financial innovation can create economic euphoria that can destabilize the economy and hurl it into a deep depression (Shefrin and Statman, 2011). According to Minsky, "Ponzi finance is a usual way of debt-financing in a capitalist society. Consequently, capitalism without financial practices that lead to instability may be less innovative and expansionary; lessening the possibility of disaster might very well take part of the spark of creativity out of the capitalist system"(Minsky, 1986, p. 364).

Mainstream macroeconomic theory believe that some kind of rules and regulation can constrain the financial institutions to innovate risky papers, but Minsky has very rightly identified "games" played by banks against the regulatory authorities; "The standard analysis of banking has led to a game that is played by central banks, henceforth to be called the authorities, and profit-seeking banks. In this game, the authorities impose interest rates and reserve regulations and operate in money markets to get what they consider to be the right amount of money, and the banks invent and innovate in order to circumvent the authorities. The authorities may constrain the rate of growth of the reserve base, but the banking and financial structure determines the efficacy of reserves … This is an unfair game. The entrepreneurs of the banking community have much more at stake than the bureaucrats of the central banks. In the postwar period, the initiative has been with the banking community, and the authorities have been "surprised" by changes in the way financial markets operate. The profit-seeking bankers almost always win their game with the authorities, but, in winning, the banking community destabilizes the economy" (Minsky, 1986, p. 279). On the contrast, mainstream approach believe that financial markets mechanism price the underlying risks of

such innovative assets quite properly and thus there is no risk of any instability attached with innovation. Besides this, the historical and institutional aspects of the fragility and crisis are altogether missing in the mainstream analysis as the monetarist view of financial crisis is extremely narrow because as they only focus the bank panics and its impact on the money supply (Mishkin, 1991, p. 3). Minsky's examination of financial instability elaborate quite vividly how financing decisions in the economy are interlinked with financial-market dynamics and macroeconomic growth (Dymski,2009,p.241).This relatively better explanation about the development of fragility and crisis has been unprecedentedly acknowledged after the eruption of 2007 financial crisis when *"it*[23]*"* has happened again (Wray, 2011).

The problematic of a financial crisis is extremely complex and interlinked various financial, economic, institutional social, psychological, ethical, technological factors that interact with financial operations and affect it. The simple explanation offered by the orthodox approach limiting it merely to a monetary phenomenon is not an appropriate approach. This is the reason behind the severe criticism against the Dynamic Stochastic General Equilibrium (DSGE) framework (the building block of mainstream macroeconomic theory) and the limitations of the DSGE framework were long known before the financial meltdown of 2007 (McCombie and Pike, 2010). To sum up above discussion about the relevance of the orthodox and heterodox theories to understand the dynamics of financial crisis, it is argued that heterodox school offers a better explanation about the development of fragility and subsequent financial crisis. Within heterodox approach, the work of Minsky is of particular merit to understand the internal dynamics of market based economies, working of financial markets and the systemic development of fragility. Genesis of this approach lies in its historical and institutional aspect of the analysis that is missing in the mainstream approach

[23] The Debt-deflation.

(discussed in detail in next section). The monetarists view reflects that financial turbulence is an exception and postulates that if there is any, it is exogenous to the system and government intervention is the primary cause. While Minsky postulates that fragility has its origin within the financial system (endogenous). Policy and reforms is another important aspect of Minskian analysis that distinguishes it from the mainstream analysis. After analysing the instability of financial markets, Minsky has offered a complete blue print of reforms and advocates the role of institutions to contain it. On the contrary, mainstream approach believes in the self-stabilisation or the self-correction of markets. This important issue regarding policy is discussed in detail in the next section.

Section 3: Efficient Market Hypothesis (EMH) versus Financial Instability Hypothesis (FIH): Policy Implications of Two Paradigms

A comparative analysis of the two competing explanations of tendencies of instability in financial markets is important because from these two ideologies two different set of policy proposals emanate to minimize these instabilities. In this section we will analyses the *efficient market hypothesis* (EMH) and the *Financial Instability Hypothesis* (FIH). Both of these theories are fundamentally different in their view of financial markets in general and about policy proposal to stabilize the unstable markets particularly. The EMH served the basis for liberalized financial markets as a means to achieve stable financial markets governed by the self-correcting mechanisms. In contrast, the other paradigm calls for vigilant regulation of finance, with institutions and rules constraining and monitoring the behaviour of markets participants.

3.1. Efficient Market Hypothesis (EMH)

The EMH was developed in the 1960s by Eugene Fama in his PhD dissertation, and later on published in 1970 in the influential survey article: '*Efficient capital markets: A review of*

theory and empirical work' (Fama, 1970). He defines an efficient market as 'a market in which prices always "*fully reflect*" available information is called "*efficient*." According to the *New Palgrave Dictionary of Economics*, "The efficient markets hypothesis maintains that market prices fully reflect all available information. Developed independently by Samuelson and Fama in the 1960s, this idea has been applied extensively to theoretical models and empirical studies of financial securities prices, generating considerable controversy as well as fundamental insights into the price-discovery process. EMH thus states that at any given time, a security's price fully incorporates all available information. Buyers and sellers are completely incorporating all available information while they decided to buy or sell an asset. If investors believe that prices are expected to rise tomorrow, he will buy today because according to available information price is no longer expected to rise further. The formal statement of EMH: "*in an informationally efficient market, price changes must be unforcastable if they are properly anticipated"* was put forward by Paul Samuelson in 1965 and there followed a debate as to whether stock markets do in fact operate as efficient markets. Thus, the EMH postulates that a market is said to be efficient with respect to an information set if the price '*fully reflects'* that information set (Fama, 1970), i.e. if the price would be unaffected by revealing the information set to all market participants (Malkiel, 1992). The core of the EMH implies that there is no opportunity of arbitrage for riskless gain in an efficient market and if at any time such opportunities appear, markets mechanism correct them and they do not persists for long time.

A generation ago, the EMH, the corner stone of modern finance was widely accepted by academics financial analysts. They have faith that securities markets were extremely efficient in reflecting information about individual stocks and about the stock market as a whole. In the Weak Form of the EMH states that prices incorporate only past information about the asset which implied that one cannot detect mispriced assets and consistently outperform the market

through technical analysis of past prices. While the Strong Form of the EMH states that the current price of a stock incorporates all existing information, both public and private. In this case, one should not expect to systematically outperform the market even if trading on insider information. Thus, according to this form of the EMH, the market anticipates future developments and asset prices adjust to incorporate this information (Stefan, 2009, pp. 3-5).

The 2007 GFC has shaken the foundations of modern financial theory and free markets economics which rested on the proposition that our financial markets were basically efficient. The validity of the efficient market hypothesis has been questioned and the critics have suggested that economists have huge responsibility for the 2007 GFC because they were blinded by an irrational faith in the EMH and failed to see and forecast the development of asset prices bubble. So according to them, EMH was in large part, responsible for the crisis (Malkie, 2011, p.2). Financial Market strategist Jeremy Grantham has called the EMH "responsible for the current financial crisis" because of its role in the "chronic underestimation of the dangers of asset bubbles" by financial executives and regulators. Justin Fox seems to assert much the same thing in his worth reading "*The Myth of the Rational Market"*. The Turner Report by the UK's market regulator reaches a similar conclusion and cited the EMH as fundamental cause in the crisis in the Turner Review (The Turner Review, 2009). George Soros, in his most recent book has opined that, "on a deeper level, the demise of Lehman Brothers conclusively falsifies the efficient market hypothesis" (Soros, 2009, p. 165).

3.2. Financial Instability Hypothesis (FIH)

The concept of systemic instability is the corner stone of Minsky's conceptual framework. He developed "*Financial Instability Hypothesis***",** according to which stability breeds the instability. According to Nasica, Minsky developed an original business cycle theory based on

an endogenous and financial conception of economic fluctuations, and more specifically, on the "financial instability hypothesis (Nasica, 1999, p.1).The key feature of his conceptual approach (rather than statistical) is that it puts finance at the center of economic analysis, making it analytically inseparable from what is sometimes called real economic activity and according to him in this settings banks are very important because the capitalistic economies are run by banks. Another great insight from Minsky is about the dynamic movement from the hedge finance position to speculative (the intrinsically unsustainable) and consequently ending up as Ponzi. This Ponzi position of course arises from within the system and is subject actually to formalization in the endogenous instabilities of non-linear dynamical models (Galbraith, 2009).

Minsky denied the faith in the model of general equilibrium and believed that "investment is the essential determinant of the path of a capitalist economy; the government budget, the behavior of consumption, and the path of money wages are secondary" (Minsky, 2008, p.191). This argument is central to Minsky's FIH, which states that endogenous systemic instability is the result of the combination of the dominant role of investments and the ability to debt finance investment. "The first theorem of the financial instability hypothesis is that the economy has financing regimes under which it is stable and financing regimes in which it is unstable. The second theorem of the financial instability hypothesis is that over periods of prolonged prosperity, the economy transits from financial relations that make for a stable system to financial relations that make for an unstable system" (Minsky, 1992, pp. 7-8). Stated otherwise, The FIH "holds that business cycles of history are compounded out of (i) the internal dynamics of capitalist economies, and (ii) the system of interventions and regulations that are designed to keep the economy operating within reasonable bounds" (Minsky, 1992, p. 8). "To contain the evils that market systems can inflict, capitalist

economies developed sets of institutions and authorities, which can be characterized as the equivalent of circuit breakers. These institutions stop the economic processes that breed the incoherence and restart the economy with new initial conditions" (Minsky et al., 1994, p. 6). Minsky believed that instability is a normal result of working of modern financial capitalism and he was fully convinced that leverage is the Achille's heel of capitalism. Contrary to the mainstream approach, Minsky thought that the financial system plays a critical role in modern capitalist economies. "Liability structures, which link yesterdays and tomorrows to today, introduce a degree of intertemporal complexity into the economic process beyond that due to the different expected lives of capital assets, the gestation period for investment output and the time it takes to transform a labor force" (Minsky, 2008, p. 3). Such complexity may generate time series that can be characterized as incoherent, chaotic or ones that exhibit hysteresis (ibid.). According to him, a fundamental characteristic of our economy, Minsky wrote in 1974, is "that the financial system swings between robustness and fragility and these swings are an integral part of the process that generates business cycles". Minsky fleshed out the main features of the FIH in a series of articles in 1977[24], 1992 and in "*Stabilizing an Unstable Economy"* published in 1986. If we recollect Minsky's fundamental hypothesis, two mechanisms are identified as the internal dynamics of capitalist economies and the system of interventions and regulations: "The financial instability hypothesis is a model of a capitalist economy which does not rely upon exogenous shocks to generate business cycles of varying severity. The hypothesis holds that business cycles of history are compounded out of (i) the internal dynamics of capitalist economies, and (ii) the system of interventions and regulations that are designed to keep the economy operating within reasonable bound" (Minsky, 1992 b, p. 8)**.**

[24] Minsky, Hyman P (1977), "A Theory of Systemic Fragility", In *Financial Crises*: *Institutions and Markets in a Fragile Environment.* Edward I. Altman and Arnold W. Sametz (eds.). New York, John Wiley and Sons.

He explains the evolution of financial markets towards instability by three positions of the investors. According to him economy evolves through the "*hedge*" finance to "*speculative*" finance and then in the direction of "*Ponzi"* finance. In the so-called *hedge case*, borrowers are able to pay back interest and principal when a loan comes due, a situation exhibiting precautionary lending practices indeed; in the *speculative* case, they can pay back only the interest and therefore must roll over the financing; and in the case of *Ponzi finance*, companies must borrow even more to make interest payments on their existing liabilities (Minsky, 1982, pp. 22-23, pp. 66-67, pp. 105-106; Minsky, 1986, pp. 206-213). According to him, over an extended tranquil period, the success of past investments prompts firms to become less risk averse and to gradually change their portfolios in such a way that the time series of future cash flows generated by assets become increasingly destined to fulfill the time series of debt service payments generated by liabilities (Minsky, 1995a, p. 85). Specifically, firms become less risk averse because "the value of portfolio liquidity" declines when cash flows yielded from operations are strong (Minsky, 1991, p. 162). Indebtedness not only increases, but it becomes more short-term for two reasons. First, the production of output tends to be of a short-term nature, and, so, requires short-term financing (Minsky, 1980, p. 506). Second, the interest rate on short-term debt is less than the interest rate on long-term debt in a tranquil period, as agents think they have better knowledge about the short-term than they do for the long-term in a world filled with uncertainty. This being the case firms begin to introduce rollover financing to increase their bottom lines (Minsky, 1995b, p. 203). Implications of refinancing are: (1) debts grow faster than profit on productive investment, if the interest rate is constant or rising, and (2) demand for financing becomes more and more inelastic to changes in the interest rate (Minsky, 1980, p. 517). Eventually, short terms over indebtedness gradually weaken the whole economy and it turns out to be vulnerable to any increase in the interest rates and dwindling cash flows.

In his 1992 essay, Minsky stressed that bankers and other financial intermediaries are "merchants of debt, who strive to innovate with regard to both the assets they acquire and the liabilities they market" (Minsky, 1992b, p. 6). Thus the expansionary phase of the FIH leads eventually to the Minsky moment. This is why Minsky also called his FIH "a theory of the impact of debt on economic system behavior" and "a model of a capitalist economy that does not rely upon exogenous shocks to generate business cycles" (Minsky, 1992b, pp. 6-8). As rightly pointed out by Wray, ¨Minsky's view is that the transformation of the economy and its financial structure from robust to fragile is due, not to external market factors like government intervention and regulation, but to the 'normal' operations and incentives of financial capitalism (Wray, 2011, p. 62).

3.2.1. Institutional Dimension of the FIH

Richness about the "institutional dynamics" of FIH has been overlooked, although various authors have also emphasized the need to understand the institutional foundation of Minksy to understand his proposals to contain instability and reforms (Whalen, 2007; Wray, 2008 and Dimsky, 2010). Importance of institutions is strongly emphasized by Minsky himself, who assigned them the function of constraining the development of financial fragility. Institutional dynamics typically describes the influence of institutional mechanisms and the government interventions in the financial markets. Furthermore, Institutional factors impact the nature of business cycle and act as "thwarting systems" to counteract and to contain the consequences of economic fluctuations and the financial crisis (Nasica, 1999, p. 1). This aspect of FIH is quiet important and distinguish Minsky's analysis of fragility because it is a part of endogenous dynamics of the financial cycle leading up to financial fragility. According to Minsky, the upward phase of the cycle is driven by two important factors.

1. The internal dynamics of capitalist economies and

2. The system of interventions and regulations that are designed to keep the economy operating within reasonable bounds.

Papadimitriou and Wray have emphasized the omnipresence of institutional dynamics of the Minskyan analysis which is no doubt his main contribution to the macroeconomics. Minsky detached from the Post Keynesian tendency (tradition) to push institutions into the background in order to develop the 'general theories'. According to him, institutions must be brought into the analysis at the beginning; useful theory is institution-specific" (Papadimitriou and Wray, 1997, pp.3-4). The question of institutions is addressed in the early work by Minsky (1957), where he posits the principles of the intervention of institutions in the development of instability. He believed that institutional innovation, coupled with the motive of profit, is a potential source of instability because institutional innovation (new form of financing, new substitute to liquid assets) reduce the liquidity of the financial system and economy thus setting a fertile ground for instability which Minsky has very thoughtful encapsulated in his FIH by placing institutions at the heart of his analysis and his *Financial Instability Hypothesis*[25].

It is important to refer here to Minsky's paper "Economic Insecurity and the Institutional Prerequisites for Successful Capitalism" co-authored with Whalen (Minsky and Whalen, 1996). Its appealing title is suggestive about the necessity of institutional development as a way out of the endogenous mechanisms of financial instability in the modern capitalistic economies. Thus, a better understanding about the role of institutions of financial systems is vital for the better policy design to contend the fragility in the capitalistic economies. Accordingly, stabilizing function of institutions consists in warding off or halting the process of financial instability in the FIH is emphasized by Minsky (1986) as, "Instability is due to the

[25] The titles of papers published between 1992 and 1996 illustrate this primacy: "The capital development of the economy and the structure of financial *institutions*" (Minsky, 1992).

internal processes of our type of economy. The dynamics of capitalist economy […] leads to the development of conditions conducive to incoherence […]. But incoherence needs not to be fully realized because institutions and policy can contain the thrust to instability" (Minsky, 1986, p. 11). This function is taken up and clarified subsequently: "in a world where the internal dynamics imply instability, a semblance of stability can be achieved or sustained by introducing conventions, constraints and interventions into the environment" (Ferri and Minsky, 1991, p. 20). Minsky posits that "The financial instability hypothesis is a model of a capitalist economy which does not rely upon exogenous shocks to generate business cycles of varying severity. The hypothesis holds that business cycles of history are compounded out of (i) the internal dynamics of capitalist economies, and (ii) the system of interventions and regulations that are designed to keep the economy operating within reasonable bounds" (Minsky, 1992 b, p. 8).

Minsky ascribes the stabilizing function of the institutions placing them as the "circuit-breakers," designed to counteract dynamic of the crisis and the mechanism behind such crisis. For Minsky, it is utmost important to curtail the evils of market system and for the success of the market based economies, it is utmost necessary to have a set of institutions and authorities characterized as the equivalent of circuit breakers. These institutions are instrumental in halting the economic processes that breed the incoherence (Delli Gatti, Gallegati and Minsky, 1994, p. 5). He has endorsed institutions' functions to ensure stability in two following ways; The first track followed by public intervention in the event of crisis in the form of a LOLR function of the central bank, termed by Minsky as the "Big Bank" and socialization of investment ("Big Government"). The objective of this first stabilisation function of the institutions is "restart the economy" and to influence agents' expectations so as to halt the self-sustaining debt deflation mechanisms. Minsky summarize this first stabilizing function as

follows, "the economic incoherence containing mechanisms may be considered to be analogous to electronic circuits that prevent perverse feed backs: by halting endogenous processes they impose new initial conditions within which the structure will generate an alternative, presumably more satisfactory, future" (Minsky, 1992 a, p. 12). The second stabilisation function of the institutions is through intervention against the instability dynamic is to "prevent" it to happens. Here Institutions act on the "destabilizing" forces of financial systems and it depends on the on the form and effectiveness of the institutions of the financial systems and ultimately fragility is contained. Accordingly, FIH clearly states that the endogenous dynamic of crisis depends partially on the degree of effectiveness of the institutional forms within the financial system. The causal relationship between the effectiveness of (stabilizing) institutions and the development of dynamic fragility is expressed as "The aptness of institutions and interventions will largely determine the extent to which the path of the economy through time is tranquil or turbulent" (Delli Gatti, Gallegati and Minsky, 1994, p. 7)

3.2.2. Historical Facets of Minskyian Analysis

The historical setting of Minsky's analyses is spanned around the post-World War II United States' economy when monetary and fiscal policies were actively as stabilisation policies to maintain higher levels of employment and economic growth. Thus a noteworthy and fundamental element of Minsky's institutional approach is its historical aspect. This characteristic feature of his analysis successfully asserts the lineage in the analyses of the American Institutionalisms. Two components are quite significant in the Minsk's historical line of analysis; the first is his thrust to develop an economic analysis designed as a process occurring over the course of time and the second is his ponder that capitalist dynamics may take on many forms (Whalen, 1999). His articulation between the development of capitalism, institutional forms, financial innovation and dynamics of how a financial systems works, is

the nucleolus of this history-based approach (Sinapi, 2011, p. 12). Minsky has elaborated the development of capitalism by thoroughly observing and studying the changing financial and economic systems of the United States between 1929 and the 1990s. On the basis of this observation and examination, he has identified five stages in the capitalist's development; these are (1) merchant capitalism, (2) industrial capitalism, (3) banker capitalism, (4) managerial capitalism and (5) money manager capitalism (See Annexure 1: Stages of Capitalist Development). In the United States, each of these five stages of capitalist development corresponds to a period from 1929-1933 through to the 1990s. Thus, the hall mark of Minsky's institutional approach lies in the historical context of analysis with specific characterisation about the development of the various stages of financial system. Identification of these different stages of a financial system is fundamental to suggest about different institutional adjustments are requisite to respond financial fragility or financial crisis. Thus it is important to integrate institutional factors of contemporary market economies (deregulated financial markets) in the business cycle analysis (Nasica, 1999, p. 16).

3.3. Policy Implications of Two Paradigms

After discussing in detail the theoretical foundations of the financial crisis and fragility, it's time to move to the policy side. Our purpose of the detail discussion of theoretical approaches was to see in the end that what these two schools have views to fix up the situation and what they have policy prescriptions. George Soros has said that "the salient feature of the current financial crisis is that it was not caused by some external shock ... the crisis was generated by the system itself". He has rightly blamed the 2007 crisis as the culmination of a 30-year domination of economic policy by a free-market ideology (or the so called neo-liberalism, economic liberalism, economic fundamentalism, Thatcherism or the Washington Consensus). The central thrust of this ideology has been that government activity should be constrained, and ultimately replaced, by market forces. In so doing during the past three decades, we have

seen how unchecked market forces have brought capitalism to the precipice. The banking systems of the advanced economies has collapsed in 2007 forcing the stern believers in *self-correction* mechanisms of the markets and policymakers to shun the neo-liberal philosophy for the time being and suggest respective governments to made unprecedented and extraordinary interventions to stop the panic and rescue the national and global financial system. Looking forward beyond the theoretical foundations of the financial crisis; the question arises of how we can avoid a repeat of such events in future and how we can decrease the fragility of the financial system, without impeding too much its efficiency.

Role of policy in the containment of fragility or instability is a very important issue to examine: After reviewing in detail what theory says about crisis; let's come to policy. What policy proposals emanate from the mainstream and the heterodox theoretical foundation? Here we will discuss these two main policy prescriptions in detail.

3.3.1. Mainstream Policy Perspectives

Theory and policy are intimately related most often; therefore policy recommendations are derived from theory. Thus the theory provide the intellectual justification for the policies and the mainstream macroeconomic theory has served as the foundation for the policies perused during the last 30 years in the advanced and emerging economies. Theory says that markets are efficient because agents operating in these markets are very rational and the capability of market mechanism does not allow any mal allocation/distribution of the investments and economic resources. According to the main stream macroeconomic theory presented by EMH, markets are efficient and financial markets are particularly more efficient and self-stabilising. Mainstream theory thus believes in deregulated and liberalised financial markets with very minimum government interventions and if crisis like situation and some fragility occurs in the system, this mainstream requires more role for the markets to self-correct. According to this

belief in the efficiency of free markets the government is a source of instability. If government does not try to manipulate the credit markets, give no subsidies, government safety nets are eliminated and markets are set free about any sort of corporate control, then markets would produce the best possible result (Calomiris, 2009, p. 74). Mainstream macroeconomic theory advocates handling the important issues like uncertainty through the market forces alone without any controls and regulations by the public authorities.

Thus, mainstream macroeconomic theory does not help to foresee a probable crisis, nor has it helped understand it or craft solutions. Most mainstream macroeconomic theoretical deliberations of the last thirty years turned out to be self-referential, inward-looking distractions at best. Research tended to be motivated by the internal logic, intellectual sunk capital and aesthetic puzzles of established research programmes rather than by a powerful desire to understand how the economy works and most importantly how it works during times of financial stress, instability and crisis. Robert Lucas infamously said in 2003 "central problem of depression-prevention has been solved", he has been completely failed to realise that worst then depression situation is evolving underneath the intricate and complex financial markets. For many policy makers, the financial meltdown of 2007 was surprise; both mainstream macro theory and policy was not ready to face such a devastating manifestation of the financial markets. Therefore, it is claimed that the economics profession was caught unprepared when the 2007 financial crisis struck.

Most important issue of contention between the orthodox and heterodox approach is about the role of financial regulation. Orthodox policy prescription for the financial markets regulation revolves around two important factors. Firstly, regulator must ensure that a fair exchange takes place in financial markets and contract are honored by the parties. Secondly regulators

are required to ensure that financial intermediaries do not abuse the trust of the depositors, banks do not extend credit facilities to unworthy borrowers and don't not involve into speculative investments. This environment calls for a light touch regulatory approach where regulators main thrust is just sets up broad principles of regulation with banks and financial intermediaries, providing them a level playing competitive environment to operate and if they are involved in risky ventures, they are allowed to internalise risk calculations and it is assumed that they know the best practices to minimize their risk as well. So in the pre-crisis 2007 environment, an independent monetary policy and the light touch financial regulatory paradigm were two policy pillars of the authorities. Independent monetary policy meant to ensure the price stability and strict financial regulation was largely seen as a policy anachronism. Theoretically, in fiat money systems, public authorities manage the volume of money and credit by changing the reserves of the banking system. Therefore, in principle the management of money and credit, financial markets and intermediaries generally is administered by allowing the agents to measure price risk accurately by the market mechanisms are instrumental in risk measurement and optimal allocation of credits. However issues of monetary and financial institutions management can thwart the so called "welfare-enhancing effects" of these markets and resultantly financial crisis occurred. Again, as discussed above, the major reason for the prevailing paradigm was policymaker's strong belief in efficient markets hypothesis where market participants are fully informed and rationally make decisions, thus the there is no probability of some kind of asset price bubble and if any bubble occurs, markets have the ability to self-correct it and self-stabilise them without any public or institutional support (Rudd, 2009), therefore any attempt to regulate financial markets will only constrain the efficiency of markets (Regulatory issues and Polices are discussed in the 4th chapter).

Another issue of policy debate between the two theoretical schools is the central banks as lender of last resort (LOLR) institution. A LOLR role of central bank was originally conceived by Thornton (1802) and then developed further by the Walter Bagehot (1873). Accordingly, LOLR role of the central bank requires the Central Bank to provide liquidity to the banking institutions in the event of bank panics. Monetarist agrees to this function of the central bank but only when bank panics can reduce the money supply, thus central bank can function in LOLR in a narrow band and any lending's by the central bank other than the situation of bank panics can lead to inefficiencies in the financial markets because bailing out inefficient financial institutions results in excessive money growth and inflationary tendencies in the economy. Thus monetarists believe in the role of central bank to keep the growth of monetary aggregates at an appropriate rate, but accordingly LOLR is not necessary for a vibrant economy (Mishkin, 1992, p. 16).

Monetarists also postulate that the operation of the discount window may be unnecessary and Open Market Operations are sufficient to control the money supply thus maintain a well function economy (Mishkin, 1992, p. 17). On the basis of this reasoning, Friedman (1958) called to shut down the Federal Reserve's discounting operation. Goodfriend and King (1988) in the recent years seems to agree to this proposal because they believe in the dichotomy on the central bank activities monetary policy (changes in the monetary base) and its banking policy encompassing the regulatory and supervisory activities and lending the individual intuitions in the times of financial distress or crisis. Since Goodfriend and King consider the financial crisis as monetary phenomenon, according to them there is no need of banking policy on the behalf of a central bank and its discounted lending facilities. This view further postulates that regulatory and supervisory activities are required only when the discount lending of central bank is costly. They also suggest about elimination of the Federal Reserve's discount lending (Goodfriend and King, 1988, p. 18).

Unfortunately the 2007 GFC has falsified this intellectual edifice of the policy. It is generally accepted that idea behind the theory has proved futile (Ormerod, 2010). Even in the circles of mainstream theorists and policy makers, it is recognised that efficient market hypothesis is unable to ensure growth due to its limitations and this theory has utterly failed during the 2007 financial meltdown and fundamental reason is that mainstream theory does not have framework to handle uncertainties and market forces alone are unable to correct if instability occurs in the system.

3.3.2. Non-Mainstream Policy Perspectives

This section focuses on the policy prescription of Minsky analytical framework. We have discussed the Fisher and Kindleberger explanations about the fragility and crisis in the above pages. These analysts have also offered their particular policy prescriptions also. Since our focus is to highlight the reforms and policy proposal of Minsky, therefore policy suggestions of Fisher and Kindleberger are presented very briefly. For policy, Fisher suggested the intervention of monetary authorities to contain the process of debt-deflation. He endorsed that *"*Finally, I would emphasize the important corollary, of the debt-deflation theory, that great depressions are curable and preventable through reflation and stabilisation" (Fisher, 1933, p. 350). Kindleberger also points towards the central banks role as LOLR to contain the deflation or crisis. He believed that "markets work well on the whole", but sometimes "will be overwhelmed and need help" from a lender of last resort. He was also aware about the issue of moral hazard while endorsing the LOLR function of the central bank, so he suggested, a "lender of last resort should exist, but its presence should be doubted" by the markets which should not be certain about the timing of rescue from the LOLR. This will requires them to be more cautious. Minskys policy and reforms proposals are discussed in detail in the following.

3.3.2.1. Minsky on Policy and Reforms

Minsky was convinced that a programme of financial reforms must be based on a critique of the existing system that identifies not only what went wrong, but also why it happened. He has accurately suggested that "unless we understand what it is that leads to economic and financial instability, we cannot prescribe - make policy - to modify or eliminate it. Identifying a phenomenon is not enough; we need a theory that makes instability a normal result in our economy and gives us handles to control "it" (Minsky, 1986). He deeply understood the importance of the financial system for the economy and believes that without a sound financial system, credit, loans and investment, economy is unable to generate employment. He has long advocated that sound financial governance and oversight is the lynchpin of economic and social stability. His analysis shows that the level of financial system regulation, its transparency and accountability has direct bearing on the stability of the financial system. Minsky recommended that that reconstruction of financial system should be in line with an ever evolutionary nature of financial innovation; therefore he recognized the need for a dynamic financial regulation up-to-date with financial innovation. In a quest to stabilize the system, he posits that any downturns can be contained through systematic governmental action i.e. the lender-of-last-resort interventions and big-government expenditures can limit damage to the real economy (Dymski, 2009).

In Minsky's view, the capitalist economy had an ever present, inherent tendency to generate speculative booms but he was sceptical to believe that regulations could provide a permanent solution to the financial instability of capitalism. According to him, markets would always find innovative ways around any system of regulation (Leijonhufvud, 2009, p.7). Minsky's core insight into capitalist dynamics that instability is endogenous which eventually undercut the economic growth due to perverse interactions between uncertainty, competition and fear

(Dymski, 2009, p. 240) are profoundly relevant and appear ant even today. Contrary to the mainstream belief, Minsky asserted that capitalist economies with developed and complicated financial structures are likely to fluctuate regularly, and may even be highly unstable; thus economies require thwarting mechanisms to set limits and function as floors to these fluctuations (Minsky and Ferri, 1992). Important principles of Minsky "*Thwarting Systems*", his "Big Government and "Big Bank" and the comprehensive reforms agenda he presented in the 13th chapter of his seminal work "Stabilising an Unstable Economy" are recapitulated in the following.

3.3.2.2. Minsky's "Thwarting Systems"

Minsky advocated the setup of adequate institutional thwarting mechanisms and increased vigilance by the public authorities to keep the financial system stable. According to him, public vigilance is extremely essential because once the stabilisation process sets in; it has the propensity to become highly destabilising eventually (Nasica, 1999, p. 17). He insisted on "the creation of new economic institutions which constrain the impact of uncertainty", and argued that the "aim of policy is to assure that the economic prerequisites for sustaining the civil and civilised standards of an open liberal society exist. If amplified uncertainty and extremes in income mal distribution and social inequalities attenuate the economic underpinnings of democracy, then the market behaviour that creates these conditions has to be constrained" (Minsky, 1996, pp. 14-15).

Minsky believes that different institutional mechanism are prominent feature of modern market economies and their setting determine the level and nature of economic fluctuations in such economies. They play a key role in halting and correcting the endogenous incoherence of the dynamic processes in an economy. According to Minsky, the floors and ceilings are example of such set of institutional mechanisms that are set up by the public authorities to

contain the economic fluctuations and resulting instability, due this Minsky called this institutional arrangements as the "*thwarting systems*". Minsky strongly believes that government through its budgetary policy and the central bank through its lender of last resort function can become the corner stone of stabilising procedures of economic activity (Nasica, 1999, pp. 2-7).

3.3.2.3. Chapter 13 of "*Stabilizing an unstable economy*" A complete Reform Design

Minsky was thoroughly convinced that effective policy making needs a complete understanding of the dynamics (short-term macroeconomic fluctuations and longer-term economic evolution) of an accumulating capitalist economy. Minsky therefore emphasized the inevitability for developing relevant theories to improve our understanding of the working of the capitalist economy (Ferri and Minsky, 1991, p. 24; Ferri and Minsky, 1989, p. 124; Minsky, 1993). Nonetheless, he was fully convinced that economics offered no easy answers. He has been a minute observer of the US financial system and as vigilant student of both theory and history; he knew that neither provided strong evidence for relying on markets alone to produce prosperity and economic stability. He once wrote, "Nobody 'up there' understands American capitalism" (Minsky, 1982, p. 202). With hindsight he offered a design of financial reforms and advocated various policies to have stable financial system that is conducive to real economy. Minsky's analysis of financial dynamics leads to some important deductions which are extremely important to restructure a stable financial system. He does not believe in the self-regulating mechanism of an economic system and strongly believe that intervention of government and monetary authorities set the limit to the endogenous instability of the system (Nasica, 2000, pp. 195- 97).

Minsky's main thrust was to design a self-regulated system that does not always depend on regular discretionary policy interventions of the government, central bank and regulatory

authorities. His particular self-regulating capitalist economy depends for its stability on "*big government"* and the *"big central bank".* In this aim, the 13th chapter of his "*Stabilizing an Unstable Economy" is* a remarkably complete design of the reforms where he has elaborated his conception of a stable, prosperous, efficient, equitable capitalist system. It may be called the manifesto of reforms and recommendations about the size of government, employment and industrial policy and lastly the financial reform. His reforms agenda has its foundation on two pillars; the size of the government and the role of the central bank. Since he has been a keen observer of the US financial system, we find regular reference about the Federal Reserve's System of the United States (Fed).

3.3.2.4. Big Government and Big Central Bank

Minsky fully understood that due to the dynamic nature of the capitalism, there is no definitive solution to control instability. Thus he sees a continuous government vigilance and response in an anticipation of changes in the institutional structure of the financial markets. New rules of regulation will always induce investors to involve in arbitrage because investors have big incentive to generate new economic structures to escape the regulation. Therefore he was very optimistic about the "big central bank" with a LOLR intervention can stabilize the financial markets and banks. Then "big government" counter-cyclical budgetary polices would stabilize the real sector of the economy.

He advocated that size of government would be large enough to run deficits whose magnitude could offset sharp declines in gross private domestic investment. To deal with the financial reform, he backed the policies to control leverage by controlling capital-asset ratios and the rate of growth of bank capital. He evaluated the Federal Reserve's open market operations (OMO) and severely criticized Federal Reserve's policy of emphasizing the efficacy of OMO relative to operating through the discount window. He has resolutely advocated that the

Federal Reserve must assume an active role in co-financing of the economic activity and this role will position it and enable it to closely monitor the activities of the banking and financial sector. Minsky postulates that, "The Federal Reserve's powers to examine are inherent in its ability to lend to banks through the discount window… As a lender to banks, either as the normal provider of the reserve base to commercial banks (the normal operation prior to the great depression) or as the potential lender of last resort, central banks have a right to knowledge about the balance sheet, income and competence of their clients, banks and bank managements. This is no more than any bank believes it has the right to know about its clients" (Minsky, 1992d, p. 10). He recognized that if at any point of time big government and big central bank remain unsuccessful in attaining the objectives of full employment in the economy, these two institutions will definitely help to minimize the volatility in financial markets and the variability to the fall in income and liquidity during economic recessions and financial crisis. He emphasizes, that "*a main aim of policy is to constrain the variability of profits.*

It must be remembered that Minsky was not against capitalist system; rather he was surprised by the flexibility of capitalist system and markets and its extent in enduring a series of financial crisis in the United States particularly. Capitalism has performed very well and it emerged from World War II with an array of new institutions that made it stronger than ever before: 'The capitalism that had a good run after the second world war was a big government interventionist economy with central banks that were less constrained than during the inter war years' (Minsky, 1993, p. 19). Nonetheless, Minsky's analysis led him to conclude that there are different forms of capitalism (like Heinz has pickles) and each forms having its pros and cons. Laissez-faire capitalism, where the government constitutes a negligible share of the economy only promotes individual initiatives and creativity leads to depressions and

inequalities, while the big-government capitalism is more stable (Tymoigne, 2008). A fundamental implication of Minsky's insights is that a fully de-regulated and liberalized financial system will not behave as a stable and automatic mechanism transferring savings to the highest return investments. The very obvious reason and the observation during the GFC of 2007 is evident that financial system does not simply serve as a conduit of channeling savings into investments but over the years it has become a party in its quest of profitable investments opportunities. This very transformation of the financial system has affected the asset and liability structure of financial organizations/banks from a stable to a fragile state in which they are unable to with stand shocks (Tavasci and Toporowski, 2010).

Minsky's warnings about capitalism's inherent volatility due to out-of-control financial dynamics were almost universally ignored by economists and policy makers (Dymski, 2009) but the 2007 financial meltdown changed all that. Even though, Minsky supported the establishment of the thwarting system for the financial markets, but he was fully aware about the link between the games played by bankers against regulators and the problems of moral hazard and too-big-to-fail (Shefrin and Statman, 2011, p. 51-53).

Analyzing the too-big-to-fail issue, Minsky explains "The United States has a type of contingency socialism, in which the liabilities of particular organizations are protected either by overt government intervention or by the grant of monopoly price setting powers… Big or giant corporations carry an implied public guarantee on their debts. This introduces a financing bias, favoring the giant corporations and giant banks, for the implicit public liability leads to preferred market treatment" (Minsky, 1986, p. 354). Addressing the issue of moral hazard, Minsky transcribed: "Whenever the Federal Reserve steps in and refinances some positions, it is protecting organizations that engaged in a particular type of financing, and is expected to do so again. The central bank is virtually assuring another crisis in the near future,

unless it outlaws the fragility inducing financial practices" (Minsky, 1986, p. 364). Minsky's major objective in his recommendations about the Federal Reserve's work was to limit increases in speculative and Ponzi financing during economic expansions but he fully supported the central bank's lending against specific project cash flows with the maturity of the loan closely matched to the expected horizon of the project. He also suggested about the elimination of corporate income tax because he viewed it as an incentive to encouraged excessive investment leaving the capital structure with excessive debt. Notwithstanding his reforms proposals for financial markets and economy as whole, he being pragmatic doubted that the right solutions can be implemented effectively, even if found. He wrote: "I feel much more comfortable with my diagnosis of what ails our economy and analysis of the causes or our discontents than I do with the remedies I propose. Even if a program of reform is successful, the success will be transitory. Innovations, particularly in finance, assure that problems of instability will continue to crop up; the result will be the equivalent but not identical bouts of instability that so evident in history" (Minsky, 1986, p. 319). He has recognized that the final out comes of the reforms would less than what were the promised objective of these reforms by the policy makers and regulatory authorities; he wrote: "Political leaders and the economists who advise them are to blame for promising more than they or the economy can deliver… The normal functioning of our economy leads to financial trauma and crisis, inflation, currency depreciations, unemployment, and poverty in the midst of what could be virtually universal affluence" (Minsky, 1986, p. 319). He believes that authorities must return to a more sensible model, with enhanced oversight of financial institutions and with a financial structure that promotes stability rather than speculation. Minsky insisted "the creation of new economic institutions which constrain the impact of uncertainty is necessary. Minsky's followers believe that it is time to take finance back from the clutches of Wall Street's casino (Wray, 2009, p. 14). The key for Minsky is not to prevent

financial crisis, since these are inevitable in advanced capitalist economies, but to react strongly through lender-of-last-resort interventions once crisis occur (Dymski, 2009). He argued that the *Great Depression* was a failure of the small-government and the laissez-faire economic model and advocated the Big Government/Big Bank highly successful model for the success of capitalism[26].

3.3.2.5. Minsky on the Capital Development of the Economy

Minsky in his work insisted about the proper role of the financial system was to promote the much needed "capital development" of the economy. He do not aim at banks to finance investment in physical capital; rather he was more concerned about the creation of such financial structures which would be conducive to economic development and raising the standards of living of common people. He gave detailed proposals about the capital development of the economy in his famous paper, "*The Capital Development of the Economy and the Structure of Financial Institutions"* in 1992. These proposals were initially meant to the newly independent eastern European nations, but they hold for EMEs generally. Minsky argued that the critical problem was to "create a monetary and financial system which will facilitate economic development, the emergence of democracy and the integration with the capitalist world" (Minsky, 1992c, p. 28). He also elaborated the different ways of capital development and suggested that there are two main ways in which the capital development of the economy can be "ill done" i.e. the "*Smithian"* and the "*Keynesian."* The first way is rooted in the orthodox school of macroeconomic theory might be called "misallocation" where wrong investments are financed by the financial markets. Indeed, the Smithian ideal (rooted in the orthodox theory discussed in the detail in previous pages) denied that that debt deflations are endogenous, rather they appeared due to exogenous factors to the financial

26 Some have critically argued that the GFC of 2007 is a convincing presentation of the failure of the Big Government and the Neoliberal model of growth. It is argued that pre-crisis economic model of the US has gradually replaced the New Deal reforms with self-supervision of financial markets by changing the regulatory laws during the last thirsty years or so.

system like strict government regulation and excessive interventions by the government; therefore as a solution to this debt-deflation deregulation, downsizing government, tax cuts, and making markets more flexible is recommended as solution. On the contrary, the second refers to an insufficiency of investment, which leads to a level of aggregate demand that is too low to promote high employment. This view postulates that the financial structure is transformed over a run of good times from a robust to a fragile state as a result of the natural reaction of agents to the successful operation of the economy. If policymakers understood this, they could formulate policy to attenuate the transformation and then to deal with a crisis when it occurs (Wray, 2010, p. 34). During the 1980s, most of the advanced and even emerging economies pursued the so called *"ill done"* way of development of financial markets and financial system. EMEs followed massive deregulation and financial liberalisation policies and it has been observed and empirically shown that, EMEs went through massive instability and suffered various types of financial crisis (discussed in detail in the 3rd chapter of the thesis).

On the basis of above analysis, it can be argued that Minsky insights can go a long way to repair the instability of the financial markets and financial system. As a matter of fact, no one has a complete blue print of reforms and polices to ensure an ever stabilised financial system. Nonetheless, Minsky historical and institutional analysis of instability of financial markets offers us rich insights (principals) to act upon for both advanced and emerging economies. From the EMEs perspective, it can be argued that one size fit all type polices would not work and tailor made solutions according to the evolving structures of particular economy would bear the fruit. Imitation of apparently successful policy regimes would only lead to further complications and more instability.

Conclusion

On the basis of above analysis, it is concluded that deregulation of financial markets, financial innovation and financial globalisation/liberalisation has increased the financial fragility and probability of recurrent financial crisis. Theoretical foundations of these polices can be find in the mainstream macroeconomic theory (also known as neoliberal theory). Critical review of the theoretical literature about fragility and crisis suggests about the relative superiority of the heterodox approach as an explanation of the build-up of financial fragility and financial crisis as compared to orthodox approach. Our analysis demonstrates that historical and institutional aspects of the Minsky's analysis are important to understand the development of financial fragility and crisis. Our analysis also presents conclusive insights about the role of policy to contain instability. Mainstream approach represented by the EMH believes in the self-correction (self-stabilisation) of the financial markets through price mechanism. On the contrary, Minsky has offered a comprehensive programme of policies and reforms to stabilise an unstable economy and believe that institutional structures and interventions are important requirement for the success of market based economies. Therefore, Minsky's recommendations about the role of *"Big Government*" and big "*Central Bank"* with LOLR functions are highly endorsed as policy conclusion.

Thus the first chapter has set the base for further discussion and analysis. Next chapter investigates the eruption of 2007 financial crisis and highlight the major policy lacunas of the mainstream macroeconomic theory (neoliberal or orthodox) for financial markets. It brings to fore, how the deregulated financial markets of the United States gradually developed the subprime bubble that burst in September 2007 and whole edifice of neoliberal intellectual philosophy collapsed with it.

CHAPTER 2: ANATOMY OF THE GLOBAL FINANCIAL CRISIS of 2007

What went really wrong? What are the lessons to learn?

"Those of us who have looked to the self-interest of lending institutions to protect shareholder's equity (myself especially) are in a state of shocked disbelief. ... It was the failure to properly price such risky assets that precipitated the crisis. In recent decades, a vast risk management and pricing system has evolved, combining the best insights of mathematicians and finance experts supported by major advances in computer and communications technology. A Nobel Prize was awarded for the discovery of the pricing model that underpins much of the advance in derivatives markets. This modern risk management paradigm held sway for decades. The whole intellectual edifice, however, collapsed in the summer of last year because the data inputted into the risk management models generally covered only the past two decades, a period of euphoria." **Testimony of Alan Greenspan, US House of Representatives Committee on Government Oversight and Reform, October 23, 2008**

It is now well documented that the 2007 GFC was originated in the US subprime mortgage market (Guillén, 2009) and spread around the globe through various channels shrinking the economic activity. This is not the first financial crisis; in the last 50 years, we have had approximately 40 events with characteristics related to financial crisis both in AEs and EMEs. However most of these were in EMEs as Argentina, Mexico, and Turkey, South Korea, Brazil and Russia. The financial crises in Japan and in the Scandinavian countries in the 1990s were particularly quite severe. However, they had little impact on U.S. policymakers and institution (Allen and Carletti, 2010). Chronicles of economic history have shown that banking and financial crisis since the Great Depression of 1929 are on rise. Usually, each financial crisis is unique event but most of the historical episodes of crisis share some common features with the present one. Historically financial crisis in EMEs have specifically started with a hasty process of financial liberalisation and opening up (Olivie, 2009). However the crisis of 2007 has the exception of being different from the previous episodes because it broke out at the very epicenter of global capitalism and its contagion was more rapid and more massive than other crisis. It is also characterized by a range of policy errors (Bilal *et al*., 2009).

The magnitude of the event and the scale of the 2007 financial meltdown have led to much heated debate to the deeper causes of the crisis. It is pertinent to understand this financial crisis as the combination of immediate factors or triggers and the more deep rooted or fundamental crisis. Immediate trigger of the crisis was the meltdown of the subprime mortgage market in August 2007 but prevailing macroeconomic arrangements and the economic paradigm played a more significant role. Pre-crisis decades since 80s are known as the period of Great Moderation due to relative stability in the financial markets and US economy saw visible decline in macroeconomic volatility. During the same period of great moderation, several EMEs integrated into world economy. Historically lower interest rates, expansionary monetary policy, current account surpluses in EMEs and corresponding deficits in the advanced economies are some prominent features of this period of great moderation. Therefore, it is argued that the seeds of the 2007 GFC (and resulting recession) are sown in the period of *Great Moderation* (Barrell and Davis, 2008) because policy makers and regulators become lax in surveillance and any possibility of such a great recession.

During the early years of the 2007 financial crisis, loose monetary policy in the US in the pre-crisis years, global imbalances and the slackness of regulatory stretch in the shadow banking system were discussed extensively as the main causes behind the crisis (Martin and Milas, 2009). The loose monetary policy view is particularly associated with John Taylor, who has argued (Taylor, 2008, 2008a) that between the 2001-2006, US interest rates were historically very low (Calomiris, 2008). Some analysts and policymakers (Caballero *et al.,* 2008; Morris, 2008; Bean, 2008) have highlighted the significance of global imbalances in the build-up of crisis. Large current account surpluses in several EMEs with under-developed financial markets, especially China led to large financial flows to AEs that drove down the interest rate in the US and other AEs. Lax financial regulation is another widely identified and agreed

factor (Borio, 2008). Slack regulation led to the sharp growth in off-balance sheet risks booked by the financial institutions and massive investments in underrated financial products created the pre-conditions for the rapid deterioration in financial markets which ultimately steered the financial system towards crisis.

The contention that sub-prime mortgages were the fundamental in the eruption of 2007 financial meltdown in the US can be also explained by the financial liberalisation policies initiated worldwide since late 70s. During this period, financial innovation emerged in the deregulated financial markets. Issuance of financial structured products, such as collateralized debt obligations (CDOs), asset backed securities (ABS) related to commercial real estate, auto loans and student loans and the credit default swaps (CDSs) played a key role in the swelling of the subprime market. New economic policies pursued by a significant number of central banks around the world, which aspire to the "New Consensus[27]" in Macroeconomics (Arestis, 2009) also played very important role. The collective impact of above stated developments and policies has been the creation of enormous liquidity and household debt in the major economies, but in the US particular, which has reached unsustainable magnitudes and produced the current crisis. Complexity of the subprime mortgages market, weak regulatory structures, and high leverage in the banking sector accelerated the eruption crisis. Truman has rightly asserted that GFC of 2007 was essentially caused by the failure of economic, financial, regulatory, and supervisory policies in the United States and other countries (Truman, 2009). Lack of transparency, excessive risk-taking; unsustainably high asset prices, irresponsible leveraging, and high levels of consumption that is fuelled by easy credit and inflated asset

[27] A New Consensus in Macroeconomics (NCM) has emerged over the past decade and become highly influential in terms of current macroeconomic thinking and of macroeconomic policy, especially monetary policy. Philip Arestis (2009) mentioned that the NCM is a framework in which there is no role for money and banking and there is only a single rate of interest. The two key of assumptions that are worth to be known are that price stability is the primary objective of monetary policy and that inflation is a monetary phenomenon which can be controlled by monetary policy and this being the rate of interest under the control of the central bank.

prices (Mshana, 2009) are some other significant features of the 2007 GFC. Weak regulatory structures and high leverage in the banking sector exacerbated the effects of the crisis (Franklin and Carletti, 2010, p. 1). This crisis underscores important theory and policy oriented lesson for lesson for both AEs and EMEs. Nonetheless, one of the fundamental lessons from the crisis is that markets alone must not be relied on heavily to deliver systemic economic stability and regulation must be dynamic keeping pace with the evolution of the financial system.

With the hindsight, the 2nd chapter provides an exhaustive assessment of the evolution and causes of the GFC of 2007 in the United States. In this aim the chapter is alienated into three sections. First section briefly presents a historical overview of the different episodes of the financial crisis from the United States and the EMEs. The main causes and the roots of the 2007 GFC are analysed and assessed in the section 2. Although, triggering event was the bursting of housing bubble; nevertheless, it is argued that the financial system was already so fragile that just about anything could have caused a whole collapse. The section 3 of the chapter summarises the important theory and policy oriented lessons to be learnt. The debate in the chapter is closed by a brief conclusion at the end.

Section 1: Historical Overview of Some past Episodes of Financial Crisis

Historically, bubbles, crashes, and financial crisis have occurred and are still occurring with striking regularity and can be termed as the quite pervasive phenomena throughout the financial history. Evidence for these bubbles and crisis is available to us during all time periods for which financial data is available. Furthermore these bubbles and crisis have ensued in almost all financial markets (AEs and EMEs both) at all stages of financial development: developed financial systems as well as emerging economies and developing financial markets. With this hindsight the financial crisis of 2007 and subsequent recession

across the globe is not an exception and not at all unprecedented (Bordo and Landon-Lane, 2010). Financial history is replete with such patterns and here in the first section of this chapter we have compared the recent crisis in the United States with some past episodes. No doubt, the description of earlier events of crisis leads to a sense of *déjà vu*.

According to Bordo et al. (2001), the frequency of financial crisis in recent decades has been doubled when the crisis under the Bretton Woods Period (1945-1971) are compared with the Gold Standard Era (1880-1993). Some influential sources on this subject are Bordo et al. (2001), Eichengreen and Bordo (2002), Bordo and Meissne (2007), Reinhart and Rogoff (2009), IMF (2009, 2010) and Bordo and Lane (2010b). While discussing these events from financial history from the United States and Emerging economies, we will also consider very briefly several factors (innovation, globalization, deregulation and financial liberalisation) that could explain the patterns of global financial crisis. This brief historical overview would lead us to conclude with some policy implications of our evidence.

1.1. Analysis of Major Crisis Episodes from the United States

Kindleberger in studying financial crisis has rightly observed: "for historians each event is unique. Economics, however, maintains that forces in society and nature behave in repetitive ways. History is particular; economics is general" (Kindleberger, 1978, p. 14). It is pertinent to explore some common patterns associated with financial crisis of the past and present. If one focuses on the US financial system during the 20th century, persistence occurrences of financial crisis seem a norm but nature and extent of various crises are incomparable. Some distinguished features of financial crisis in the US are the bank failures; Friedman and Schwartz have rightly said that financial crisis in US means the banking crisis (Friedman and Schwartz, 1963). An exhaustive list of various bank failures in the United States since 1934 is given in the Annexure 2.Nonetheless, some important episodes from the United States

financial history are elaborated in the below to highlight inefficiency of financial markets, market failures and the inadequate financial regulation (Acharya et al., 2011, p. 2).

1.1.1. The Banker's Panic of 1907

This panic is termed as one of the major banking crisis episode in the United States. It was triggered by the Bank of England's (BOE) discrimination against merchant banks that were financing US trade. As British insurance companies were making huge payments to cover losses stemming from the San Francisco earthquake (Odell and Wiedenmeir, 2004). The banking panic of 1907 led to significant output losses in several other countries (Bordo and Eichengreen, 1999) like hitting hard France, Italy, Denmark, Sweden, Japan, Chile and Mexico. This massive panic was followed by the First World War in 1914 and enormous lenders of last resort (LOLR) operations were carried out in the United States. Many countries closed their stock exchanges and imposed capital controls to prevent such panics in their countries. Some important lessons were learned by the authorities after this bank panic were: Firstly it was evident that, fractional reserve banking is inherently precarious. Secondly, information on solvency of financial institutions is utmost important to have but extremely difficult to gather and financial institutions have inclination to hide such vital information from authorities. Finally, there is dire need of a lender of last resort for solvent but illiquid institutions to maintain the financial stability. This particular panic of 1907 established that private provision of required liquidity through the clearing house associations was proved ineffective when it was most needed (Acharya *et al*., 2011, p. 4).

In May 1908, Congress passed the Aldrich Vreeland Act that created the National Monetary Commission (NMC), whose mission was to study the underlying causes of the Panic of 1907 and to sketch out proposals to minimize the likelihood of such events in the future. The final report of the NMC was published on 11th January, 1911. After two years lengthy debates, the

Congress passed the Federal Reserve Act in December 22, 1913. The bill was signed by President Wilson on December 22, 1913, creating the Federal Reserve System in the United States.

1.1.2. Banking Panics and the Great Depression of 1929-33

There were three separate waves of bank panics during the 1930s; these were in 1930, 1931, and early 1933. Contractionary monetary policies of the US Federal Reserve were the main reason behind these crises (Friedman and Schwartz, 1963, Meltzer; 2003, 2004). Federal Reserve remained unsuccessful in dispelling these various crises (Friedman and Schwartz, 1963; Bordo and Lane, 2010b) and these events eventually turned to "*Great Depression*". The prices of goods and services plunged by approximately 25% between 1929 and 1933 resulting into a sever debt- deflation in the United States. The collapse of the real estate bubble in the second half of the 1920s was the biggest contributing factor to the 1929 stock market crash. A "*bank holiday*" was declared as the immediate response to contain the panic and it helped to calm down the system. Later on proper policy response of the authorities came in the form of "*The Banking Act of 1933"* (the Glass-Steagall Act). The Act created the Federal Deposit Insurance Corporation (FDIC) to provide credible government insurance for individual bank deposits and which effectively dealt with the problem of retail bank runs. The Glass-Steagall Act separated investment banks from commercial banks in an attempt to insulate depositors' savings from being used to finance high-risk investments in the financial markets. The creation of the FDIC was hailed as the most successful policy response to the banking crisis of the 1930s. The Glass-Steagall Act also required that all banks that were members of the Federal Reserve System and thus they have their deposits insured up to a monetary limit placed by the FDIC. Within six months of the creation of the FDIC, 97% of all commercial bank deposits were insured. The FDIC has been a highly successful institution because it solved the problem of uncertainty about the solvency of the banks among retail depositors.

Some other important regulatory measures introduced during this period were the Securities Act of 1933 and the Securities Exchange Act of 1934. The main intention of this legislation was to ensure that investors receive significant information concerning securities being offered for public sale and to redress market misbehavior (Acharya *et al*., 2011, p. 5).

1.1.3. Savings and Loan Crisis of 1980s

Savings and loan (S&L) crisis of the late 1980s is considered as the most serious post-war crisis in the US banking sector costing over $100 billion to US government. Also known as savings and Loan debacle, it left about 2000 financial institutions failed and yet two of the three biggest deposit insurance funds had to be recapitalized. During the first three years of the decade following this crisis, 118 Savings & loans worth $43 billion failed as compared to only 143 S&Ls with $4.5 billion in assets had failed during the previous 45 years. Relatively lax regulatory environment under Reagan administration is blamed for this massive failure (White, 1991). The Savings & loans were created to serve the public policy goal of encouraging home ownership at a larger scale. In this aim, the Federal Home Loan Bank Act of 1932 created the Federal Home Loan Bank System to provide liquidity and low-cost financing for S&Ls. There were twelve regional Home Loan Banks; these were owned by their members and were under the supervision of the Federal Home Loan Bank Board (FHLBB). The National Housing Act of 1934 created the Federal Savings and Loan Insurance Corporation (FSLIC) to provide federal deposit insurance for S & L, similar to what the FDIC provided for commercial banks. In contrast to the FDIC, which was established as an independent agency, the FSLIC was placed under the authority of the FHLBB. Regulatory forbearance increases moral hazard dramatically because of an operating but insolvent S&L (FDIC Report, 1997).

A critical evaluation of the S&L provides several important lessons for authorities involved in regulating the financial institutions. Most important lesson is that despite a great variety of

regulatory structures, deposit insurance systems and banking organizations, there are possibilities of serious banking problems.

1.1.4. Continental Illinois Failure of 1984 (the famous "Too-Big-To-Fail" case)

It is one of the most notable bank failures of the series of various banking crisis of the 1980s involving Continental Illinois National Bank and Trust Company (CINB) in May 1984 (which was and still is the largest bank resolution in U.S. history). The Continental episode is noteworthy because it focused the attention of researchers and policy makers on important banking policy issues of that period and the most significant of these issues was the question of effectiveness of supervision. During the 80s, when banking sector difficulties increased, US congress questioned the adequateness of internal risk assessment models of the financial institutions. The economic dislocation such a large bank failure like the Continental Illinois also engendered increased scrutiny of the supervisory process. Continental was particularly an enormous challenge as an institution involved in excessive risk taking, yet its performance had not yet been seriously compromised. It was the famous "*too big to fail"* case and indeed Continental Illinois episode highlighted concerns about both large-bank supervision and the challenges of large-bank failure and the required resolution mechanisms. Due to public authorities and the regulator's apprehension about the fate of Continental correspondent banks (institutional interconnectedness issue) and the amount of systemic risk in can inflict on the whole system, regulators were not ready to pursue a course different from the one taken in 1984, but their options were limited due to Continentals own peculiar characteristics vis-à-vis the whole banking sector. Although, it was a very large bank but it owned proportionately few core deposits, no retail branches, and little franchise value. Nevertheless, after Continental episode, regulators introduced some significant changes as the banking agencies acquired greater experience with large-bank failures. Furthermore, regulators were given more flexibility giving allowing them to deal with large-bank failures more efficiently. The most

important addition to the regulatory arsenal was the bridge-bank authority granted by Congress in 1987. By the early 1990s, many of the issues surrounding TBTF had been addressed under Federal Deposit Insurance Corporation Improvement Act of 1991 but the problem of systemic risk and how regulators must respond remained unresolved (FDIC Banking Review, 1998).

1.1.5. Long-Term Capital Management (LTCM) Collapse of 1998

Another episode that deserves mention in US litany of financial crisis is the collapse of the Long-Term Capital Management, *a* hedge fund that had grown rapidly between 1994 and 1998, and was too interconnected that, it was thought to be a systemically risky institution. LTCM's demise was the result of Russian debt crisis (Russian default on external debt on 15th August, 1998) and it is said that the collapse has nearly blown up the world's financial system. According to Greenspan (1998): "had the failure of LTCM triggered the seizing up of free markets, substantial damage could have been inflicted on many market participants, including some not directly involved with the firm, and would have potentially impaired the economies of many nations, including our own". A central feature of the LTCM collapse was the sudden disappearance of liquidity from credit markets in the US. Coincided with Russian sovereign default, the LTCM collapse triggered enormous strains on financial markets across the globe. The huge magnitude of LTCM's liquidity problem and unwinding of its positions prompted the Fed to orchestrate a private-sector bailout for LTCM and a cut in the interest rate. However, it was an orderly insolvency and dissolution of LTCM without any undue harm to the markets or the banks most directly involved. It was in September 1998, that the Fed organized a rescue plan of LTCM to circumvent the dire consequences for the domestic world financial markets. Additionally, Fed's quantitative easing (75 basis points) also contributed to calm the market. The lessons of the LTCM collapse were articulated in a report entitled "Hedge Funds, Leverage and the Lessons of Long-Term Capital Management".

Published in 1999, the report quite plainly delivers that procedures for unwinding complicated systemic firms needed urgent attention (Acharya et al., 2011). The primary lesson to be learned from the LTCM debacle is that the combination of tremendous "leverage" and "illiquid markets" is a very dangerous one (Prabhu, 2001, p.10) and an equally important lesson is that better mechanisms were needed for the resolution of large, systemic important and interconnected firms (Annexure 3: A Summary Description of Five Major Financial Crisis in the United States During The 20th Century).

Although, the above analyzed crises episodes from the US history (except the Great Depression of 1933) are not comparable with the GFC of 2007 but these episodes exhibits some specific regulatory failure and also highlight how US authorities realized these failures and subsequently institutional set up was arrayed to limit the reoccurrence of such events again. The GFC of 2007 has its parallel with the Great Depression (1929) in terms of economic devastation and resulting recession. It is argued that the 2007 housing bubble is a transformation or the extension of the previous dotcom bubble which were contained by the policy makers temporarily without addressing the real roots. The 1907 bankers panic was aggravated due to uncertainty about the bank solvency rules, to solve the issue US central bank (Federal Reserve System) was created with the LOLR facilities. The Great Depression of 1929 underscores the uncertainty about banking institutions insolvency and resulting massive runs. To respond the issue, Federal Deposit Insurance Corporation (FDIC) was created. The subsequent period saw the relative tranquillity about bank runs. Continental Illinois failure in 1984 highlights the issue of too-big-to-fail (TBTF) and the importance of a highly interconnected financial institutions and impact of its failure on the overall financial markets. Authorities created mechanism and regulatory oversight for the TBTF institutions. Savings and Loan Crisis of the 1980s highlights very important issue of mispriced

government guarantee which created misaligned incentives in the financial markets. To solve the issue authorities sketch out the risk-based deposit insurance for such institutions instead of relying on deposit insurance only (see the Annexure 3).

Undoubtedly, the current financial crisis is different and deeper from earlier crisis episodes which were contained. This crisis has some parallel with 1930s great depression in terms of its severe impact on real economy and economic growth. Stock market and dot-com bubbles of 2001 were limited (although financial wealth destroyed and economic activity restrained) and successfully tackled by the authorities because debt footprint of these bubbles was not that deep as compared to the housing bubble of 2007. The massiveness of this bubble, impact of its bursting on the US economy and its contagion to the global economy is unprecedented. This situation is truly reflective of the systemic nature of this crisis and its deep impact on world economy that even after the five years of crisis advanced economies are still in depression and future economic out looks is very bleak.

1.2. Financial Crisis Episodes from Emerging Market Economies

Since the late 80s, when most of the EMEs started deregulation and liberalisation of the financial markets in the wake of globalization, these economies have been hit hard by dramatic highs and lows, sometimes lifted by large capital inflows, and then plunged into chaos by constrained credit and out-of-control exchange rates. This section presents very brief historical narrative on earlier financial crisis (banking, currency and debt) in the EMEs. Over the course of the last 25 years, Mexico, Thailand, Malaysia, Chile, South Korea, Indonesia, Russia, Turkey, and Argentina have all been struck by different forms financial crisis. However two remarkable characteristics of this phenomenon must specified here, the first include the "developing" status of the affected countries; secondly the fact that their respective crisis have tended to coincide with financial liberalisation reforms which have had

allowed international investors seeking high return by investing in high-risk developing economies. As the master architect of the Bretton Woods Institutions Keynes observed "financial markets are driven essentially by speculative behaviour and likely to impose constraints on national policy autonomy. He therefore argued for capital controls" (Damodaran, 2000). Some important episodes from EMEs are discussed below.

1.2.1. The Latin American Debt Crisis of 1982

The Latin American debt crisis started in 1982 and not only impacted the important economies of the region like Mexico, Argentina, Chile, Ecuador but several other countries like Egypt and Turkey were affected severely and eventually defaulted on their sovereign debt. This series of defaults triggered the financial difficulties for the banks across the globe. During the 1980s, financial markets have been integrated and liberalised subsequently. Due to innovations in financial products and instruments in this liberalised environment, hot money poured into Latin American region, which was quite enthusiastic to finance their development with this borrowed money. But due to weak fundamentals of the recipient economies they could not sustained and failed to repay the borrowings leashing the whole region into severe debt crisis. Various reports of the IMF and World Bank have documented scores of banking crisis in emerging countries in this decade.

1.2.2. Asian Currency Crisis of 1997-98

Asian currency crisis is one of the most devastating episodes of financial crisis that engulfed several EMEs of the Asia in 1997. Most of these economies were labeled as Asian Tigers due to their higher GDP growth rates and rapid development but due to this crisis many were reduced to mere Asian beggars. Main cause of the crisis was the structural distortions in finance sector and private sector imbalances in the various economies but Thailand was the first country where this crisis erupted and later on engulfed the whole economies of the region. Relative trade of several Asian economies contracted in the 90s due to recession in

Japan and declined demand from EU and in a bid to increase their export volume economies of Asia devalued currencies and Thailand was the pioneer to take this step.

Table 2.1 : Current Account (% GDP) of Selected Countries					
	Indonesia	**Malaysia**	**Philippines**	**Rep. of Korea**	**Thailand**
1992	-2.0	-3.7	-1.6	-1.3	-5.5
1993	-1.3	-4.6	-5.5	0.3	-4.9
1994	-1.6	-7.6	-4.6	-1.0	-5.4
1995	-3.2	-9.8	-4.4	-1.7	-7.9
1996	-3.4	-4.4	-4.8	-4.4	-7.9
Source: ADBP, Key indicators, 2003					

In an anticipation of low economic growth of Thailand (who has devalued its currency to me its exports more competitive) global investors speculated about Thai financial position and its foreign exchange market was hit hard in July 1997. Thai authorities and international financial institutions failed to contain the crisis and soon it spread to Malaysia, Korea, Hong-Kong, Taiwan and Japan. The Asian Currency Crisis spread globally due to integrated financial markets and several financial institutions in United States defaulted (LTCM). It also paved the way for the Russian debt default in 1998 and Brazilian default in 1998. It is argued that overvalued currency pegs, original sin (liability dollarization) the drying up of Japanese lending after its banking crisis, current account deficits (see the table 2.1 above) are main contributory factors behind the Asian Currency Crisis (BDDK, 2009). Furth more, lack of regulation and supervision of the financial markets and banking sector in a financial liberalized environment led to speculative attacks by the international investors.

1.2.3. Country Specific Episodes of Financial Crisis

EMEs (both of Latin America and Asia) individually went through various episodes of financial, currency debt and banking crisis during last three decades. Mexico has an extensive experience of suffering and confronting several economic and financial crises since 1982 and

country went through a massive banking and currency crisis in 1994[28]. Russia suffered debt crisis in 1998 due to its weak financial structures, which forced it to default on foreign-held sovereign debt, devalue its currency, imposed strict capital controls and bankrupted a large number of domestic firms (Gurdgiev, 2012). Banking crises in Chile (1982-86) and subsequent depression was according to some estimates, the fourth largest after the Great Depression of 1929. Real aggregate output fell by 20% and unemployment reached over 30% of the labour force, resultantly share of population in absolute poverty had increased to around 55% from about 30% in 1981 (Hernández and Mayer, 1998). Another emerging economy, Turkey presents a classic example of a turnaround in capital flows (Calvo termed as "*sudden stop*") which led this country into severe economic and financial crisis in 2000 and 2001. The Argentina debt crisis broke out at the end of 2000 when government debt became unsustainable due to budget deficits and maintain its currency board regime.

These above discussed earlier episodes of financial crisis have many features in common with the GFC of 2007, and examination of history can help understand the current situation and guide thoughts about reform of bank regulation (Gorton, 2009). The chronicle of these earlier global crises leads us to a sense of *déjà vu* (Bordo and Lane, 2010b). EMEs have pursued the policies of deregulation of financial markets since the 80s (discussed in detail in the 3rd chapter) in the spirit of the hypothesis about the efficiency of free market mechanisms (induced by the mainstream macroeconomic theory and conceived and implemented by the founders of Washington consensus). EMEs were told that free financial markets (induced by the neoliberal growth model) minimize the possibility of financial crisis and thus there is no need for government bailouts. However, practically these polices of deregulation and liberalisation of financial markets proved very controversial. It is argued that it was the

[28] Widely known as the Mexican peso crisis or as Tequila crisis.

agenda of the international financial institutes (like IMF and WB) and advanced economies in the guise of structural adjustment programs conceived for the then developing countries in the 80s. Mainstream macroeconomic policy claimed that financial liberalisation would promote domestic financial development, enhanced credit allocation among competing productive sectors of the economy allowing a sustainable and long term economic growth. However the experiences of EMEs suggest that financial liberalisation has mostly motivated the speculative behaviour in the under developed financial markets of the EMEs and increased the risk of economic and financial crisis (Arza and Español, 2010, p. 275).

This brief examination of history of financial crises from the United States particularly and some major episodes from EMEs have emphasized important insights about the various policies responsible for the various banking and financial crises. These specific experiences also shed light about the required reforms and regulations to contain these (Gorton, 2009).

Section 2: Anatomy of the Global Financial Crisis of 2007

Roots and the causes of the 2007 crisis has been discussed by Rogoff and Reinhart (2008), Aiginger (2009), Eichengreen and O'Rourke (2008), IMF (2008, 2009, 2010), Krugman (2008, 2009, 2010), Calomiris (2009), Gorton (2009), Ormerod (2010), Solow (2009), FSA (2009), the Turner Review, UNCTAD (2008, 2009, 2010), UNDESA (2010), the US Council of Economic Advisers (2010) and the Claessens et al. (2010a, 2010b). Our analysis here draws from the existing debate on the origins and evolution of the crisis based on these studies.

According to an IMF study, the GFC of 2007 have some similar features comparable to the past episodes of financial crisis. These are unsustainable increase in asset prices, a credit boom that led to excessive debt burdens, build-up of marginal loans and systemic risk and the

failure of regulation and supervision to keep up with financial markets activities (IMF, 2010, p. 7). Combined together in the run up of the 2007 financial crisis, all of these above mentioned factors sharply increased the risk of a financial crisis. Besides these familiar reasons, some new dimensions also played significant role in the amplification of the severity, magnitude and the global spread of the crisis. These include the widespread use of complex financial instruments, the increased interconnectedness among the financial markets, higher degree of leverage of financial institutions and the central role of the household sector (Claessens et al., 2011, p. 4). Gourinchas has posits that profound structural changes in the US banking system during the last three decades with the emergence of the '*originate-to-distribute*'[29] model is the central cause of the 2007 financial crisis. He argued that increased securitization in the US financial system led to declining lending and underwriting standers. In this environment, banking institution's reliance on short-term financing exposed them substantially to funding risks by risky bets. Amplification and contagion of the crisis heightened due to financial globalization and the strong appetite of foreign financial institutions for US structured credit instruments (Gourinchas, 2010, p. 2).

Nevertheless the crisis has brought to light several deficiencies in financial regulation and supervision, particularly mishandling of systemically important financial institutions by the regulatory authorities (IMF, 2010, p.3). Main conclusion of the FCIC report also points towards the lack of government regulation and oversight in the mortgage and mortgage-backed securities market that led to the 2007 financial crash. Additionally, the factors like low

[29] A model of banking when lenders make loans with the intention of selling them to other institutions and/or investors, as opposed to holding the loans through maturity. It is contrary to the situation of originate to hold where lenders make loans with the intention of holding them through maturity, as opposed to selling them to other financial institutions and/or investors.

interest rates, easy access to credit, lax regulation and toxic mortgages spurred the rapid deflation of the housing bubble and collapse of this bubble catalyzed a series of events that resulted in crisis and worldwide recession (FCIC Report; 2011). Some of the diverse factors which have contributed to the crisis have been succinctly and most helpfully summarized by Aiginger (2009) (See Annexure 4: Summary Table of the Causes and Triggers of the Economic and Financial Crisis of 2007).

The literature on the root causes of the 2007 GFC is quite enormous, but keeping in aim the objectives of the study, it is pertinent to highlight important macro policy failures, financial markets failures and the regulatory failures. Understanding and analysis of the underlying causes of the 2007 GFC are important for several reasons. The foremost is that a correct diagnosis of the genesis and driving forces behind the crisis is important in order to draw appropriate conclusions to prevent its recurrence in future. Secondly, identifying the main causes could help us to understand why the crisis developed in the way that it did and thirdly, the knowledge of the causes could potentially be used to outline a proper policy response to minimize the economic and financial devastation of such events (Morrow, 2011).

2.1. Deciphering the Origin of the Global Financial Crisis of 2007

Over the last two decades, the national/international financial markets particularly and financial sector has generally evolved considerably. Deregulation was followed by a burst of financial innovation (discussed in the first chapter) along with increased leverage, increased cross-border capital flows, and larger financial institutions. The 2007 financial crisis is believed to have been caused by some of these changes in the financial sector landscape. Nevertheless, the reckless behavior of financial institutions played a key role. The classic explanation of financial crisis is that they are caused by excesses and more frequently by monetary excesses, which leads to a boom and an inevitable bust. In 2007 also, we had a

housing boom and bust, which in turn led to financial turmoil in the US and around the globe (Taylor, 2008, p. 1). Rajan posits that the common cause of the 2007 financial crisis was the 'cyclical euphoria' born in some ways from previous financial crisis that swept through the EMEs in the late 1990s. Responding to these crisis episodes, EMEs became very cautious about external borrowing to finance domestic demand. Formerly net absorbers of financial capital from the rest of the world, most of these EMEs became net exporters of financial capital (Rajan, 2009, p. 397). These developments coincided with the savings of typical exporters (Germany and Japan) and resulted into a '*global saving glut*'[30] as referred by Bernanke (Bernanke, 2005). However, Norgren (2010) believe that there are several factors that combined to make this one the most severe crisis since the *Great Depression* of the 1930s; these include macroeconomic problems, failures in financial markets and shortcomings in the implementation of the regulatory policy. Some causes of the crisis can be found in the macroeconomic policies of the past years. However, failures in the financial system, particularly in the US, were at the root of the problem (Norgren, 2010, p. 17).

Calomiris (2009) has carried out an in-depth analysis of the roots of the crisis and pointed out that US governments erroneous polices were instrumental in the eruption of the 2007 crisis. He blamed the expansionary monetary policy of the Federal Reserve (which results in lower interest rates), housing policies of the Bush and Clinton administrations who particularly encouraged subprime risk-taking by financial institutions. In this environment, lax regulatory policy made it virtually impossible to ensure effective corporate governance within large

[30] Global Saving Glut is a term coined by Unites States Central Bank (Fed) chairman Ben Bernanke in 2005. The term describes a situation in which there are worldwide too many savings with respect to investment opportunities. On a national level a saving glut creates the tendency for savings to finance current account deficits (of other countries) instead of investments. This can be observed, according to Bernanke (2005), in both developing and industrial countries. The most important receiving country of these export surpluses financed by excess saving is the United States, which runs a current account deficit.

financial institutions. Additionally, prudential regulation of commercial banks by the public authorities proved completely ineffective (Calomiris, 2009, pp. 67-71).

According to Bernanke, the triggers of the crisis were the particular factors that touched off the events of 2007 as the proximate causes. A prominent example of such trigger was the subprime mortgage related developments in the financial market. But, the actual vulnerabilities of the financial system were more structural in nature more fundamental, these were financial system's own weakness. In this situation lax regulation and supervision aided to spread and amplify the mechanisms of the initial shock. Some key vulnerability of the private markets were higher levels of leverage, excessive dependence on unstable short-term funding, deficiencies in risk management by major financial firms and the use of exotic and nontransparent financial instruments that truly obscured the concentrations of risk involved in these instruments. Public sector was not left behind the private market and the critical gaps in the regulatory structure allowed the systemically important firms/markets to escape regulation. Supervisory authorities failed to recognize the threats to the stability of the system as a whole (Bernanke, 2012, p.2). In the following, we have analyzed more fundamental causes behind the global financial crisis of 2007.

2.1.1. A Macroeconomic Explanation of the Crisis

This subsection aims to look beyond the immediate causes of the 2007 GFC and provide an assessment of more structural macroeconomic forces that were instrumental to crisis at the foundation of the financial system. It is important to understand the global financial crisis as combination of some immediate factors (the triggers) and its more deep rooted causes. Collapse of the subprime mortgage market served as the trigger but policy failure to allow Lehman Brothers aggravated the already fragile situation of the financial markets. Nonetheless, the deep or real roots of the crisis have more macro orientation. GFC of 2007 is

deeply rooted in the macroeconomic framework/arrangements that US has been following since 80s also known as the neoliberal growth model (Palley, 2010, p. 16). It is argued that macroeconomic factors have more relevance to explain the 2007 financial crisis, although majority of the research and analysis has focused on micro explanation. Generally, the 2007 GFC is recognized as result of bursting of the housing bubble and the related accumulation of debts which financed this bubble. In this vain, majority of the analysis has focused on market failure in the housing and credit markets. However, the most fundamental factor behind the crisis lies with the economic model envisaged by the US authorities since 80s and this economic model need bubble to grow is largely ignored by the contemporary analysis of the crisis. Thus it is pertinent to argue that real cause of the crisis would be the economy's underlying macroeconomic structure (Palley, 2010). Regulatory failure and flawed incentives within financial markets are also importunate factors but these are more microeconomic explanations then a macro prospective.

2.1.2. Neoliberal Growth Paradigm and Role of Economic Policy

The failure of neoliberal growth model of the US economy (adopted in the late 1970s and early 1980s) seems the most important perspective of the 2007 GFC. These macroeconomic arrangements that governed the US financial markets and real economy played the fundamental role in reshaping its fragile state over the years. This so called neoliberal growth model replaced the "virtuous circle[31]" Keynesian model of US economy of the period 1945 - 1975 (Palley, 2010). This model has two key features vis-à-vis United States and the world economy; it has impacted the the pattern of income distribution and demand generation in United States economy and secondly, it shaped the international economic engagements (liberalisation of international financial markets, deregulation in EMEs, this issue is discussed in detail in the 3rd chapter of the study) of the Unites States with other regions which has its

[31] Model built on full employment and wage growth tied to productivity growth.

impact on the structure of US economy. This neoliberal economic growth model basically changed the structure of US economy and character of the US business cycle (Palley, 2005). Market's self-correction or self-stabilisation mechanisms were considered the hall mark of this model where any anomaly was believed to be corrected by the market forces automatically. This new model changed the economic policy objectives, now the policy was targeted to achieve the lower inflation level in the economy instead of attaining of full employment in the economy. The forces of globalisation and liberalisation of trade and finance in various economies around the globe resulted in the low cost exports to the United States. Thus, the neoliberal model growth models need financial booms and cheap imports to remain sustainable. Financial booms under this model facilitated the consumers and firms to debt finance their spending and increasing borrowing requirements were met through innovative financial instruments of the deregulated financial markets. This unchecked financial innovation and securitisation resulted in the build-up of leverage in the financial institutions. Cheap imports resulted in ameliorating the wage conditions and thus ensured the support of political leadership for the continuity of this economic paradigm to which Palley has labelled as the "flawed economic paradigm" of US economy. High end consumption due to increased wealth becomes prominent part of economic activity. This is the snap shot of the macroeconomic feature of the US economy since 80s. Nonetheless, increased household's debt, higher leverage ratios of firms, asset price inflation, trade deficits and bursting of various bubbles in the pre-crisis period are integral part of this macro picture of the US economy.

Another two most imortant pillars of this paradigm are the globalisation and small size of United States governmenet. Globalisation aimed to encourage free mobility of trade and capital around the globe was supported by the so-called Washington Consensus development

policy and implemented by the IMF and the World Bank also played a role in fostering the neoliberal growth agenda. Small size of government in the United States gave legitimacy to the privatization and deregulation policies for the financial markets. It was done to dismantle government apparatus of interference in the financial markets. Proponents of neoliberal paradigm believed that deregulated financial markets would price risks according to market mechanism and any anomaly would be corrected by the self-correction mechanism of the market. This small size government introduced various polices which eroded the popular economic rights and protections and various government functions were outsourced to big corporations (Galbraith, 2008).

In a nutshell, the neoliberal growth model give away the stable economic growth model (full employment and wages tied to productivity growth) and built a new growth paradigm based on rising indebtedness and asset price inflation (bubbles). Unfortunately, the neoliberal bubble economy model is unsustainable and it requires continued excessive borrowing and continued reduction in savings rates to maintain the growth rates. Now to finance this excessive and continued borrowing, ever increasing asset prices and debt/income ratios are basic requirement (Palley, 2010, p. 24). Over the years with several small crisis and bubbles in the economy, this neoliberal model becomes weaker and economy needs even bigger speculative bubbles to grow. Nevertheless, the eruption of housing bubble in September 2007 in US has its deep roots in the economic model and economic policy followed over the last two decades. The other factors like failure of markets mechanism and failure of regulatory (supervisory) policy are part of this bigger macroeconomic picture. We have highlighted these factors in the following.

2.1.3. From "Great Moderation" to Great Recession

Above discussed neoliberal growth paradigm pursued since 80s in the United States is known as the period of "Great Moderation" due to pronounced decline in macroeconomic volatility in the advanced economies and United States particularly. It is during this period of great moderation that majority of the EMEs integrated with advanced economies financial markets and financial systems. According to Barrell *et al.,* "The Great Moderation led to a gradual fall in risk premia, and hence the margin charged on risky investments as compared to risk-free government borrowing, and appeared to have enhanced prospects for growth"(Barrell et al., 2009, p. 3).

Mainstream economist and policy makers were confident that they have solved the problems of depression and controlled the macroeconomic volatility and inflation is under control, so there are no questions of any crisis or depression. Before the GFC of 2007, mainstream economists and policy makers were happy and congratulating each other for their success. Robert Lucas in his presidential speech in 2003 decaled that "central problem of depression-prevention has been solved, for all practical purposes, and has in fact been solved for many decades" (Lucas, 2003, p.1). Bernanke celebrated the Great Moderation in economic performance over the previous two decades and in 2004 he endorsed the Great Moderation for improved economic policy making. In his famous paper "The State of Macro" in 2008, Olivier Blanchard has declared that "the state of macro is good." The battles of yesteryear, he said, were over, and there had been a "broad convergence of vision" (Krugman, 2009). Any dissident voice was looked upon. In 2005, Raghuram Rajan presented his seminal paper "Has Financial Development Made the World Riskier?" in the proceedings of the Federal Reserve Bank of Kansas City and warned that incentive structures in the banking profession were leading to reckless credit expansion, herding, and other "perverse behaviours." However, his

views were given a cold shoulder by the audience at the Jackson Hole meeting .Nevertheless, the stylised facts of the GFC of 2007 find roots in these years of "Great Moderation" It was the macroeconomic environment featuring lower interest rates, loose monetary policy, increased current account balances of the emerging economies (particularly China) and increased goods trade deficits of the United States. Nonetheless, the fundamental vulnerability stemmed from financial institutions excessive risk taking and the ballooned household debt. Policy maker's lax regulatory oversight in the hindsight that macroeconomic stability of the Great Moderation period would continue unchecked led the financial institutions to expand their balance sheets exorbitantly. This financial expansion was funded by the securitisation, increasing leverage and reducing liquidity, leaving banks vulnerable to defaults in the household sector (Davis, 2012). In this environment of regulatory forbearance, banks accumulated higher leverage ratios on their off-balance sheet in order to avoid on-balance sheet capital charges. During period of stability, this behaviour is tolerated without penalties but once financial markets are in panic and fragility, the whole financial edifice swayed further exacerbating the uncertainty about the extent of various risk (Bean, 2009)

As discussed in the first section of the chapter, the US economy went through various financial crises in the last 100 years. But it remained stable even during the stock market crash of the 1987; the Mexican Financial Crisis in 1994; the Asian Financial Crisis in 1997 and 1998; the Russian debt crisis and the Long-Term Capital Management crisis in 1998 and the bursting of the dotcom bubble. Apparently, all these episodes were contained by the policy interventions but the main reason was that due to relative macroeconomic stability since the 80s the economy seemed less volatile and less risky. Thus it seems possible that policymakers, investors, and bankers believed that improvements in macroeconomic stability were a given condition and resultantly they become averse to any idea of such big financial

crisis. Several regulatory restrictions about banks and financial institutions were eased in these years. Therefore, Thomas Cooley (2008) postulates that there is rather deep link between the Great Moderation and the financial crisis. According to him the understanding of this link may help the future regulatory requirements. Because in the days of so called macro stability or the great moderation financial institutions underestimated the actual amount and nature of risk they were piling up and thus over estimated their expertise to handle the leverage. This naturally resulted in a reintroduction of volatility into the markets (Cooley, 2008).

2.2. Monetary Policy Related Failures

Here we have concentrated specifically on two key and most debated explanations. These are the role of U.S. monetary policy in the years leading to the crisis and of Global Imbalance are considered as a factor to fuel credit expansion in the United States. A brief pre-crisis macro review would be helpful to understand the issue more thoroughly.

2.2.1. Monetary Policy Stance of the Federal Reserve and Low Interest Rates

Accommodative monetary policy was followed by the Federal Reserve to halt recessionary tendencies in the global economy (Rajan, 2009, p. 398). But unfortunately, this loose monetary policy stance of Fed resulted in low interest rates and ignited demand in the housing sector of the US economy. The impact of this expansionary monetary policy on interest rates is also widely debated as the fundamental cause of the crisis (Krugman, 2009; Summers, 2008; Schwartz, 2009). In this regard, central bankers are blamed for keeping policy rates "*too low for too long"* in the early part of the last decade (Taylor, 2007; White, 2009). According to this view, in the Federal Reserve had cut interest rates sharply in response to stock market crash and the financial markets booms of 90s but this step sowed the seeds of the housing boom and bust of the 2007. Due to lower interest rates the borrowings by individuals

to purchase residential housing became more affordable and at the same time house prices sky rocketed. Household's indebtedness increased and household debt/disposable income measure reached new highs in almost all Western countries (Norgren, 2010, p. 18). There is substantial empirical evidence available to establish that in an environment of accommodative monetary policy, banks appetite for risk is usually increased (Calomiris, 2008). Taylor has discussed the role of lower interest rates of the pre- crisis years as the central factor behind the 2007 GFC (Taylor, 2007, 2009).Another potentially important factor behind the 2007 GFC is the critical flaws in the inflation targeting regime which have been pointed out with reference to its nonessential role for money and its neglect of distortions and instabilities arising from the credit channels (Borio and White, 2004; Goodhart 2008; Borio, 2008 ; Christiano et al., 2010).

Role of global imbalances is particularly emphasized by Fed's chairman Bernanke (2009) as the prime cause of the 2007 GFC. Accordingly; "*in my view, it is impossible to understand this crisis without reference to the global imbalances in trade and capital flows that began in the latter half of the 1990s"* (Bernanke, 2009). Mervyn King (2010) and Obstfeld and Rogoff (2009) have also validated that capital flows from developing economies poured into advanced economies, mainly in the form of reserve accumulation from the EMEs like China. Mervyn King (2010) has argued that the massive flows of capital from the new entrants into western financial markets pushed down interest rates and encouraged risk-taking on an extraordinary scale.

In January 2001, US economy was showing the signs of sluggish economic growth following the collapse of the dotcom bubble. Federal Reserve started to loosen monetary policy stance in a bid to make the situation ameliorate and kick start the economic growth and employment.

In this aim, the Federal Open Market Committee (FOMC) reduced the Federal Funds rate from 6.25% to 1.75% by the end of the year. Policy rates kept going down in 2002 and 2003, although at a markedly slower rate, reaching 1% on June 25, 2003. The Federal Funds rate was set to stay at this unusually low level for a full year, until June 24, 2004. Two important considerations motivated the Fed for its decision of maintaining low nominal interest rates over that period. First, employment was recovering more slowly than expected from the 2001 recession. Second, the FOMC was seriously concerned about the risks of a Japanese-style deflation, following the collapse of U.S. equity markets and dotcom bubble. Now after the crisis, analysts have argued that the extended period of low policy interest rates between June 2003 and June 2004, followed by a period of "measured" rate hikes is directly or indirectly responsible for the crisis: policy rates were too low, for too long, fueling the housing boom and ultimately destabilizing the U.S. economy (Taylor, 2007, 2009, 2010).

Table 2.2 : Selected Interest Rates in the United States (2000-2008)

Period	Federal Fund Rate	US Treasury (10years)	Conventional Mortgages
2000	6.24%	6.03%	8.06%
2001	3.88	5.02	6.97
2002	1.67	4.61	6.54
2003	1.13	4.01	5.85
2004	1.35	4.27	5.84
2005	3.22	4.29	5.86
2006	4.97	4.80	6.41
2007	5.02	4.63	6.34
2008	2.00	3.89	6.48

Source: Inside Mortgage Finance, Gorton, 2008

Thus, it is believed that the Fed's loose monetary policy primarily fuelled the rapid rise in house prices in this period which paved the way to mortgage defaults and so led to the over-pricing of mortgage-backed securities. In the aftermath of the stock market bubble of 1999-2000, the Federal Reserve moved aggressively to cut interest rates. During 2002-2004, the Federal Funds Rate dropped to 1%-2%, helping to inflate the housing bubble of 2001-6.

When the Federal Funds rate rose to about 5% in 2006-2007' the housing bubble burst (CDPR Report, 2009), see the table 2.2 above

However, Foote et al. (2008) maintained that interest-rate resets are not the main factor behind the collapse of the US subprime market. In the same vain, Borio and Disyatat (2011) and Laibson and Mollerstrom (2010) have emphasized that the global savings glut may not be related to the downward pressure on world interest rates and the financing of the booms in those countries. In an attempt to answer the questions that do external imbalances increase the risk of financial crisis? Jorda et al., have empirically studied the experience of 14 developed countries over 140 years (1870-2008) and the authors posits that that credit growth emerges as the single best predictor of financial instability. No doubt, external imbalances have played an additional role, but more so in the pre-WWII era of low financialization than today (Jorda et al., 2011, p. 4)

2.2.2. The Housing Bubble

Schiller in "*Irrational Exuberance*" has examined that increased housing prices were in complete deviation from what would have been suggested by economic fundamentals. This irrational exuberance led to burst of overheated housing market which eventually created the financial crisis. However the affordable housing policy of US government played an important role in creating the housing euphoria. The US government's political consideration led to stimulate housing demand in the economy; congress fully backed this easy housing policy and Fannie Mae and Freddie Mac were created as the government sponsored enterprises. Since 1992, these two institutions have immensely increased their purchases of mortgages going to low- and moderate- income borrowers (and minorities) under the pressures from the congress (Schwartz, 2009, p. 20). Various regulatory rules and supervisory

oversights were relaxed for these government sponsored organisations as compared to other financial institutions on the Wall Street.

It is argued that the housing policies pursued by Clinton administration and extended by the Bush administration were responsible for the eruption of subprime mortgage collapse which latter turned into global financial crisis and recession. Wallison and Burns believe that U.S. government's housing policy is a *sinequanone* of the 2007 GFC as this policy was instrumental in creating 27 million subprime and risky loans. Nonetheless, affordable housing policy was more politically motivated and US Congress relaxed the borrowing standards under the Community Reinvestment Act to encourage depository institutions to lend to low income lending schemes to own a house. It is not unexpected that when crisis started in 2007, half of all mortgages (28 million loans) were on the balance sheets of Fannie, Freddie and other government agencies (Wallison and Burns, 2011).

Since the early 90s congress initiated a housing policy for low income voters and it was pressed by the Department of Housing and Urban Development (HUD). Both the Clinton and Bush Administrations used this policy as tool for political gains. To increase the homeownership among lower income groups and minorities, intense efforts were made to relax the mortgage underwriting standards. Bush believed that "Americans do best when they own their own home" and emphasized that "owning your own home" is as a part of economic security of a family. In the same way, the Clinton administration used the "affordable housing goals" under an ambitious plan "The National Homeownership Strategy: Partners in the American Dream". This led the Fannie Mae and Freddie Mac to lend massively and increasing the availability of mortgage credit to low-income borrowers. Resultantly, the homeownership rates reached to 65 percent in 1995 to 69 percent in 2004, highest ever in the

history (Wallison, 2012). Table 2.3 reports data on the size of US mortgage[32] market from the 2001 to 2006. Nonprime mortgages originations (subprime, Alt-A and HELCO) were more than $ 1 Trillion annually in 2004, 2005 and 2006. These surged upward as a share of total originations from the 14% in 2001 to 48% in 2006. Most of these subprime loans were adjustable rates loans, due to be reset in the period 2007-2009 which may be very much part of the reasons for the crises (Dwight *et al*., 2011, p. 61).

Table 2.3: US Mortgage Market Originations Between 2001-2006 (US $ Billion)

	Jumbo	**Sub-prime**	**Alt-A**	**HELCOs**	**Total**	**ARMs**	**Prime**	**Non-prime**	**% Non-prime**
2001	450	120	60	130	760	355	1905	310	14
2002	576	185	67	170	998	679	2463	422	15
2003	650	310	85	220	1265	1034	3330	615	16
2004	510	530	185	355	1580	1464	1850	1070	37
2005	570	625	380	365	1940	1490	1750	1370	44
2006	480	600	400	430	1910	1340	1550	1430	48
Sourc: Inside Mortgage Finance, Gorton, 2008									

Table 2.4 below shows data on the relative size of the subprime origination and securitization market between the period 2001 and 2006 in the United States. It is clearly observable that over this period, subprime origination tripled from $ 190 billion to $ 600 billion annually, claiming a market share of 20.1% from 8.6%. More pertinent to the current crises, however, is the fact that the proportion of securitization went from 50.4% to 80.5%, in other words, almost all the subprime mortgages ended up in structured products (Dwight *et al*., 2011, p. 66).

[32]Mortgage loans are typically classified as prime or nonprime, depending on the risk that a borrower will default on the loan. Nonprime loans are further distinguished between "subprime" and "alternative-A" (Alt-A), again depending on credit risk. Generally, borrowers qualify for prime mortgages if their credit scores are 660 or higher and the loan-to-value ratio is below 80 percent. Borrowers with lower credit scores or other financial deficiencies, such as a previous record of delinquency, foreclosure or bankruptcy, or higher loan-to-value ratios, are more likely to qualify only for a nonprime loan. See Sengupta and Emmons (2007) for more information about nonprime mortgage lending.

Table 2.4 : Subprime Origination & Securitisation in the USA (2001-2006) *(US$ Billion)*					
	Total	**Subprime**	**Share %**	**Subprime MBS**	**% Securitized**
2001	2215	190	8.6	95	50.4
2002	2885	231	8	121	52.7
2003	3945	335	8.5	202	60.5
2004	2920	540	18.5	401	74.3
2005	3120	625	20	507	81.2
2006	2980	600	20.1	483	80.5
Source: Inside Mortgage Finance, Gorton, 2008					

Financial market analysts have argued that housing markets were displaying standard signs of a price bubble in the pre-crisis years from 2000 to 2006 and the subsequent collapse of this overextended housing market definitely supports this view. Nevertheless the problems in the household sector have played a more prominent role in GFC of 2007 unlikely to the previous crisis and served as the fundamental trigger. Particularly, the origins of the crisis have much to do with non-traditional mortgage loans and steeply rising home prices; more than 30% from 2004, peaking six quarters prior to the beginning of the crisis which in the up-turn translated into various risky assets whose value relied directly or indirectly on overheated housing market (IMF, 2010). To substantiate our argument, a year on year trend in the US National Housing index and its growth over the pre-crisis years is elaborated with data in the table 2.5 below. When the bubble was burst, the households find themselves poorly positioned to absorb losses. Collateral and confidence badly damaged through wealth effect as they tried to adjust sharply their consumption patterns. Higher than ever household leverage has implications for the transmission of the crisis from the financial sector to the real economy, making the resolution mechanisms and policy responses more complicated. A vicious cycle of rising foreclosures, falling home values and disappearing securitization markets quickly developed in the US financial market. In this situation of uncertainty, vulnerable borrowers got susceptible to the increased interest rates and falling home values, find it impossible to refinance their mortgages. This eventually led them to higher ever

monthly payments, rising the delinquencies and default rates on the Wall Street. A wave of finance company failures occurred because no longer they were able to securitize subprime mortgages. This resulted in a virtual breakdown in mortgage origination adjustments. Increased foreclosures supplemented the downward pressures on house prices. Resultantly, tightening standards for new mortgages and consumer credit led to a sharp compression in consumer spending that compounded already difficult situations in the real sector (FDIC Report, 2010).

Table 2.5 : S & P / Case-Shiller, US National Home Price Index (Q1 2000=100)

Q2 of the Year	US NATIONAL HOME PRICEE INDEX (S& P / Case-Shiller)	RATE OF CHANGE (over the previous year)
2000	103.77	9.50%
2001	112.69	8.60%
2002	122.24	8.50%
2003	134.20	9.80%
2004	152.92	13.90%
2005	176.70	15.60%
2006	189.96	7.50%
2007	183.56	-3.60%
2008	155.32	-15.30%

Source: US Census Bureau.

2.2.3. United States Trade Deficits and Global Current Account Imbalances

Enlarged trade deficits of the United States and global current account imbalances are the factors embedded in the neoliberal growth model pursued by the United States since 80s. In the pre-neoliberal model days, policymakers viewed trade deficits as hurdle to the economic growth; but under the neoliberal growth model trade deficits were allowed to control inflation and these deficits are reflective of the choices of consumer and markets. Nonetheless, the choice and of pursuing the policy of the self-interest of economic agents is the foundation of neoliberal growth model (Palley, 2010, p. 19). During the last 25 years, trade deficits were allowed to grow steadily in the United States and reached higher peaks as share of GDP in each business cycle after 1980 and recorded a 6.4 percent of GDP in 2006. It is explained in

the table 2.4 below. The neoliberal growth model engaged in the international trade and finance to substitute cheaper imported inputs for U.S. domestic production and to facilitate US manufacturing establishments outside the country (notably in China and other EMEs). These cheap exports of the EMEs were destined to the US and the obvious result was the persistent global current account imbalances. EMEs assets/reserves accumulation through exports to United States resulted in the lower interest rates in the US and financial institutions on the Wall Street managed the huge amount of money through new financial products and mostly invested in the housing sector. It is said that the current account surpluses in several EMEs fueled the credit booms and risk-taking in the major advanced deficit countries (US particularly blamed China). These flow of capitals from EMEs in the financial markets of the advanced economies put a significant downward pressures on advanced economies interests rates and thus this money destined to the housing sector which busted in the second half of the 2008. Many observers and policymakers have singled out this global current account balance as the key contributing factor to the Wall Street turmoil (Bernanke, 2009; King, 2010; Krugman, 2009; Portes, 2009 and The Economist, 2009).

TABLE 2.4: United States Goods Trade Deficits

Peak year	Trade deficit (US$ million)	GDP(US$ billion)	Trade deficit (as %GDP)
1960	3508	526.4	0.7
1969	91	984.6	0
1973	1900	1382.7	0.1
1980	-25500	2789.5	-0.9
1981	-28023	3128.4	-0.9
1990	-111037	5803.1	-1.9
2001	-429519	10128	-4.2
2007	-819373	13807.5	-5.9

Source: Palley, 2010, p. 19

China is not the only country to blame for capital influx into US, some oil exporting countries of the Middle East, Latin America and Africa have been running large and rising current

account surpluses. Large proportion of these current account surpluses were invested in AEs and Wall Street particularly designed new instruments to absorb this abundant money. The increased demand resulted in higher prices and lower government bond yields and low returns on fixed income financial assets across all the advanced economies. Thus, apart from all the positive effects of low inflation and low interest rates, a side effect was a rapid accumulation of debt among households in the Western world (IMF, 2010; BIS, 2011; FSR, 2009) and resultantly the financial system became loaded with risk about which its participants were largely unaware. However several authors (BIS, 2011; Backus and Cooley, 2010; Caballero, 2010) have refuted the role of global imbalances in the eruption of the 2007 GFC. These capital flows in an environment of inadequately designed and unregulated financial system of the advanced economies led to risky investments. Undoubtedly, in a globalized economy with free capital mobility credit cycles and capital flows have the potential to reinforce each other more strongly than before. But the data clearly suggest that excessive credit growth poses the key risk to stability and the global imbalances (Jordà, *et al*., 2011, p. 34).

Table 2.5 : Global Current Account Balances *(US $ billion)*

Period/Year	World	AEs	USA	China	EMEs
1980s	-68	-41	-78	-1	-27
1990s	-85	-4	-122	12	-81
2000	-182	-268	-415	21	86
2001	-174	-213	-389	17	39
2002	-152	-229	-472	35	77
2003	-73	-221	-528	46	148
2004	-43	-255	-665	69	213
2005	-45	-473	-792	161	428
2006	-19	-536	-857	239	544

Source :World Economic Outlook, Online Database and IMF

2.3. Financial Market Related Failures

Severity of any financial crisis depends crucially on the underlying macroeconomic conditions of the economy and financial market's exposure to these conditions. Apparently, the 2007 financial crisis has occurred in an environment of stable and higher growth levels accompanied by macroeconomic imbalances, low interest rates and abundant liquidity in the system. Theoretically, a well-governed and resilient financial sector should perhaps be able to function in such an environment, without creating the excesses seen over the past decade. It was not the first time when interest rates were low and asset prices were booming. Therefore, it can be argued that the GFC of 2007 in many ways was a result of inherent weaknesses prevalent in the financial markets, which allowed a massive and underestimated buildup of risk (Norgren, 2010, p. 21)**.** With this hindsight, we will analyzes the 2007 financial crisis through the lens of market failures and describe that there were set of market failures which include excessive risk-taking in the financial sector. Furthermore regulatory focus was individual institution specific, markets and regulator both ignored the systemic risk and opacity of financial products also played its role (Acharya *at al*., 2011, p. 10). Nevertheless, these various market failures are believed to trigger and amplify the financial crisis in the USA. Following subsection has analyzed some significant market failures where markets failed to self-correct these anomalies through its self-regulatory mechanism.

2.3.1. The -Too -Big -Too -Fail Doctrine and Distorted Market Incentives

Too-big-to-fail (TBTF) implies that government would not allow some institutions to fail due to their big size and their interconnectedness because this interconnectedness of big financial institutions can cause significant disruption to the financial system and economic activity. This belief in the TBTF and mispriced implicit government guarantees (the expectation that the government will bailout) led financial markets to involve in the huge moral hazard. Markets were induced to invest their funds at lower rate without properly evaluating the

financial conditions and risks premium. Regulatory arbitrage becomes a primary business of the banking institutions in the presence of these guarantees and TBTF doctrines. This collectively eroded the market mechanisms to play their due role and resultantly shadow banking world of conduits and money market funds grew (Acharya and Richardson, 2009). TBTF beliefs and the presence of guarantees undermine the markets discipline to self-regulate and monitor (Warburton and Anginer, 2013).

2.3.2. Opacity of the Financial Institutions and Instruments

Pre-subprime crisis period can be marked by unprecedented surge in the securitization and innovative financial instruments including all types of derivatives, prime and subprime products and Collateralised Debt Obligations (CDOs) and undoubtedly these elements were central in the collapse of the whole housing loan markets. Securitization was not the new phenomenon; it has been long used as a technique of issuing standard prime loans conforming to the underwriting standards of Government Sponsored Agencies (GSEs). However, the depth and extent of securitization has changed remarkably in the pre-crisis decade and particularly in the run up years to the crisis. Non-conforming mortgages in the U.S was 35% in the 2000 but in 2007 alone more than 70% of non-conforming mortgages in the U.S. being were securitized (Ashcraft and Schuermann, 2008; Gorton, 2008; Brunnermeier, 2009). It was a complex process of layering and tranching with more assets packaged increasingly and cash flows from securitized loans were further separated, repackaged and sold out as CDOs. This extensively expanding originate-and-distribute model and the inadequate regulatory capture collectively created the agency problems[33]. This phenomenon demonstrated the opaqueness of the financial institutions and the products issued by these vulnerable institutions. In this situation, risk management seemed the least import task and it was vaguely maintained by the

[33] The agency problems means here moral hazard.

institutions as they have no incentives for the due diligence. Insufficient monitoring by loan originators and an emphasis on boosting volumes to generate fees was the sole objective of the financial industry and responsibility to assess the hidden and underlying risks associated with the assets in originate-and-distribute modelwas relegated to the credit rating agencies. Due to conflict of interest[34] and the deficiencies in the rating process, this led to inflated and less informative risk ratings which actually masked the extent of risk exposure in certain institutions (like insurance companies) which otherwise were perceived to be more prudent. This amplified balance-sheet opaqueness and reliance on wholesale funding increased the degree of systemic risks and fragility ever more (Acharya and Bisen, 2010). Therefore, when U.S. housing prices began to decline and defaults began to rise, the complexity of issued instruments undermined the price discovery and led to freeze in the liquidity and securitization activity.

2.3.3. Buildup of Excess Leverage in Financial Institutions

Leverage increased sharply in the financial sector of US through the shadow banking system, the increasing share of investment banks and non-deposit-taking institutions. In AEs financial sectors, high leverage meant that initial uncertainties about liquidity quickly deteriorated into serious solvency concerns. This also meant that firms in EMEs now faced much higher borrowing costs, lesser opportunities to issue equity, and few alternative sources of financing.

[34] Credit Rating Agencies have lost much of their reputation in this crisis, mainly as a result of giving high initial ratings to securitized mortgage-backed securities that after the event appear to have been wrong. They are widely accused of nefarious behaviour, notably via a conflict of interest, since they get paid by the issuers of securities (the sell side), who naturally want higher ratings. Credit rating agencies have a franchise value that depends on objective opinions. This would be undermined if they were known to shade their assessment in order to gain business. What is of greater concern is the conflict of interest that arises in the advisory business of CRAs. The advisory arms of CRAs help potential issuers structure offers in such a way as to gain a desired rating. Having advised an issuer on debt structure, it is hardly likely that the rating arm of the CRA would fail to grant the promised rating. We therefore favour the legal separation of ratings business from ratings advisory services. We also favour enhanced transparency about the way in which CRAs assess the creditworthiness of structured products.

The massive build-up of leverage among the US households sector is another distinguished feature of the GFC of 2007 especially differed from previous crisis. Somewhat similar development were observed in the run-up to Japan's real estate crisis in the 80s , where household debt-to-income ratio increased sharply but, households' leverage (measured as the household debt-to-assets ratio) declined. This was indication that Japanese homeowners built equity in their properties as real estate prices soared. But US housing sector underwent altogether different paradigm and declining housing prices increased the leverages of homeowners. This highly leveraged situation of housing sector limited the financial system's ability to absorb even small losses. It was not a surprise that this high leverage contributed to the rapid decline in confidence and increase in counterparty risk even in the earliest phase of the crisis (Brunnermeier, 2009).

Unprecedented Loan-to-income values left households vulnerably exposed to even small shocks and even a moderate declines in house prices led to push households into negative equity. High leverage of the financial system impairs the liquidity and solvency of the financial institutions. Mark-to-market rules of accounting paved the way for further deleveraging and panic sales. Facing shortage of funds and the financing constraints, several hedge funds further fuelled this rapid unwinding process and system seemed to collapse immediately. In this situation, asset price declined even more, distressed asset sales increased and, recapitalization requirements of the financial institutions were augmented enormously leading to further loss of confidence and ensuing the financial meltdown of 2007 (Acharay and Bisen, 2010). Another important aspect of this crisis is that leverage build-up was not restricted to the advanced economies. Several emerging economies faced similar vulnerabilities in the anticipations of constraints on foreign flows of financing. Due to global deleveraging, heightened investor risk aversion, and repatriation of funds, most of the

emerging economies suddenly found foreign funding sources increasingly scarce and experienced sudden stops or reversals of capital flows.

Above analysis substantiates the argument that market failures cannot resolve with private incentives and mechanism alone. There is need of an adequate and dynamic regulatory framework. It is pertinent to highlight some of the regulatory failures also here because these regulatory failures played quite significant role in the eruption of the 2007 financial crisis.

2.4. Regulatory and Supervisory Failures

Undoubtedly, regulatory failure played a significant role in the build-up of 2007 financial crisis. Various supervisory lapses and degree of regulatory capture was clearly inadequate. Rules regarding capital and liquidity proved inadequate in the face of pro-cyclicality and the situation exacerbated further by mark-to-market accounting rules which allow banks to reduce capital requirements in stable financial conditions. Lack of an appropriate legal framework to deal with massive bailouts and capital injections further worsen the situation. Financial supervision miserably failed at the individual financial institutions level to detect the accumulation of systemic risk. It is argued that various regulatory lacunas developed over the years in response to various policies initiated by the US government over the decades. Pre-2007 crisis period (since 1980s) known as the *"Great Moderation*" where US economy particularly (and other advanced economies too) saw periods of sustained growth, lower levels of macro volatility and cost of risk dropped considerably (Stock and Watson, 2002). This period of "*Great Moderation"* created complacency among the policy makers and regulators and they take the macroeconomic stability as given condition. Thomas Cooley (2008) also seems agreed that relatively stable macro conditions or the Great Moderation years led financial institutions to underestimate the risk (systemic) accumulated and thus involved in risky bets and increased the leverage to unmanaged levels. Many regulatory

changes were introduced in these years to make US banks more competitive internationally and several protections of Glass-Steagal Act were removed gradually. Regulatory failure is also acknowledged by Bernanke: "Stronger regulation and supervision aimed at problems with underwriting practices and lenders' risk management would have been a more effective and surgical approach to constraining the housing bubble (Bernanke, 2010) (See Annexture 5: Financial Crisis as Regulatory Failure). In this subsection, we highlight the major regulatory failures.

2.4.1. Presence of the "Shadow Banking System"

The failure to regulate the shadow banking system was one of the fundamental regulatory lapses. Various regulatory and legal changes introduced in the US economy allowed the buildup of the shadow banking system in US financial markets. The shadow banking system[35] describes the non-traditional financial operations (Diamond and Rajan, 2009; Gorton, 2008) and grew out of the securitization of assets and the integration of banking with capital market developments (Adrian and Shin, 2009). Three types of institutions i.e. the money-market mutual funds (MMMFs capture retail deposits from traditional banks, securitization (which move assets of traditional banks off their balance sheets), and the repurchase agreements (repos) that facilitated the use of securitized bonds as money (Gorton and Metrick, 2010) took the full advantages of these regulatory changes. Shadow banking system grew rapidly before the crisis, from an estimated $27 trillion in 2002 to $60 trillion in 2007 and now reached 67 US$ trillion in 2012[36] (FSB, 2012). Thus, due to huge magnitude of shadow banking in the financial markets, it is not unsurprising that various financial instruments like CDOs, SIVs were on the forefront of financial collapse of 2007. Even the traditional banking is risky

[35] The Financial Stability Board has defined shadow banking as entailing 'credit intermediation which occurs outside or partially outside the banking system, but which involves leverage and maturity transformation'. The shadow banking system is therefore essentially a set of activities, markets and contracts, as well as institutions; and the institutions are linked together via myriad multi-step chains (Adair Turner, *Shadow Banking and Financial Instability*, Lecture at Cass Business School, March 2012).

[36] It represents 25 to 30 percent of the total global financial system.

business and thus demands policy makers to put in place adequate regulatory framework to curtail this risk but the risks in the showdown banking system are even more sever. Financial institutions operating in the Shadow banking system skilfully circumvented the tighter regulations imposed by the regulators because these particular institutions are not subject to similar regulatory framework (World Bank, 2012). In United States, the "shadow banking system" was initiated by the creation the government-sponsored enterprises (GSE) that included Federal Home Loan Bank (1932), Fannie Mae (1938) and Freddie Mac (1970) (Fed Report, 2012, p. 13). It is argued that the rules and regulation of the 1988 Basel Accord were the instrumental in the growth, spread and the development of credit risk transfer instruments like CDOs operating under the shadow banking system (Pozsar, 2008). Nonetheless, since the 80s following the period of great moderation has also played a role in allowing the build-up of shadow banking with US financial markets. Shadow banking system permitted the financial institutions and insurance companies to do risky business in the instruments like structured investment vehicles (SIVs), collateralized debt obligations (CDOs), and credit default swaps (CDSs) and show these transactions off of their balance sheets. Most of the regulatory apparatus was aimed at on balance sheet activities of the financial institutions; there for the presence of shadow banking provided safe heavens to the investors to circumvent the even non-existent regulation. It is argued that regulatory failure about private lending activities in the market and inadequate oversight of the mortgage origination and securitisation eventually led the whole financial system to collapse. In this situation, government sponsored enterprises served as were the pioneers of this financial meltdown (FRB New York Report, 2011).

2.4.2. Regulatory Loopholes Encouraged Excessive Risk-Taking

Due to their high leverage and their expertise in altering the risk profile of various assets and securities, usually banks and other financial institutions have incentives to take on excessive

risks. However, theoretically market mechanism is required to price these risky bets of the financial intuitions correctly. These market mechanisms thus ensure an efficient level and spread of risks throughout the financial system. But two factors impeded the market mechanisms in the pre-crisis period to perform this mandatory function properly. Firstly, several protections introduced in the Banking Act of the 1933 (the Glass-Steagal Act) were phased out gradually in a bid to enhance US banks competition at the international level. Strong links of financial lobby with the congress prevailed upon SEC to remove many hurdles even in the domestic markets. In the absence of these protections, capital requirements were the only measure there to ensure regulatory compliance by limiting the excessive risk taking of the financial institutions. Financial institutions cleverly managed to exploit loopholes in the regulatory system and enormous risks were shifted in the unregulated markets. Secondly; market mechanisms failed to cape the excessive risk taking due to repeated episodes of corporate scandals and poor governance of the financial institutions and firms. External governance apparatus got weaker as the financial institutions become big, complex and opaque. Due to changed environment, financial risks at these big and complex financial institutions was largely concentrated in the hands of a few ambitious profit-risk centers, which have the expertise to produce short-run profits at the expense of long-term risks (Acharya and Richardson, 2009).

It is argued that the existence of various government guarantees like the deposit insurance by the FDIC, the implicit guarantee of *"too big to fail*" and the "subsidies" played a key role in the occurrence of financial crisis. Government sponsored institutions Fannie Mae and Freddie Mac is primary blamed for the financial crisis. These two institutions carrying heavy liabilities on their balance sheets were subject to some form of safety nets/guarantee/insurance which nevertheless has profound implications for efficiency in capital allocation, incentives

structures and the nature of whole financial intermediation. The restrictions allowed by the Glass-Steagall Act 1933 meant to separate the commercial and investment banking was repealed in 1999, during the days of President Bill Clinton. This enhanced the financial industry competition dramatically and the adequate capital requirements were the only protection of the financial system. These new regulatory rules encouraged banks to increase the relative value of risk shifting. It is argued that mispriced guarantees had effectively removed the market discipline component of governance normally reserved for creditors; risk shifting was particularly easy to do (Acharya *at al*., 2011, p. 12). Financial industry managed to shift risk (attached to residential real estate but also to commercial real estate) by exploiting loopholes in regulatory capital requirements to take an undercapitalized, US$2- to 3-trillion, highly leveraged assault on the economy. Due to its strong connections with the congress, financial industry successfully lobbied the SEC to amend the net capitalization rule of the Securities Exchange Act of 1934 which permitted the investment banks to use internal models to calculate net capital requirements to market risk and derivative-related credit risk (Acharya *at al*., 2011).

2.4.3. Unprecedented and Unchecked Systemic Risk

Over the past two decades, the systemic risk from the recurrent failures of various financial institutions (e.g. failure of LTCM, S&L) has increased tremendously. Essentially, it is a negative externality on the whole financial system because the systemic cost of a financial institution's collapse (failures of other institutions, the freezing of capital markets) is not fully internalized by the respective institution. As discussed previously, in the presence of mispriced government guarantees and after the repeal of Glass-Steagall Act in 1999, prudential regulatory measures were the only protection of the financial system. Prudential regulation was a hindrance against excessive risk taking of the financial institutions primarily through capital requirements. But still financial markets have the incentive to indulge in risky

bets and hence increased leverage within the system. The visible market failure here is market's incapacity to assess and deal with such externalities. Unfortunately the approach of prudential regulation of the financial sector has not focused on systemic risk but rather on the individual institution's risk profile. This design of regulatory compliance is seriously flawed because the regulation that ignores externalities encourages financial institutions to pass their risks freely throughout the entire system and on the balance sheets and pockets of unregulated entities. We can explain it by an example; as the financial institutions reduce their individual risks; these are rewarded with a lower capital requirement which is a kind of license to originate more risk and plausibly, the aggregate risk. After the pass-through of this newly created risk into the financial system, the individual institution's risk of failure appears to be low to the regulator, although it is either hidden in the unregulated sector or has combined to form an aggregate concern—in either case, it is systemic in nature. Instead of penalizing behavior that leads to excessive systemic risk, the pre-crisis regulatory environment appears to be rewarding it (Brunnermeier and Pedersen, 2009).

It has been observed during the GFC of 2007 that Wall Street was loaded up with financial firms carrying the highly risky instruments with the underlying threat of the systemic risk. Although Security and Exchange Commission allowed financial institutions to internalise their risks management models but financial firms become so reckless that majority of the large financial intermediaries even ignored their own securitization business models by holding onto the non-diversifiable credit risk associated with the AAA tranches of securitized loan portfolios. Typically, little capital requirements were (normally 10% to 20% of nominal credit exposure) sere attached to these risky bets on securities; understandably, all these transactions become highly leveraged (Coval *et al.*, 2008). It is well known that large expected returns go hand in hand with large aggregate risk and this. This is exactly, why

financial institutions got into so much trouble when the negative aggregate shock to the real estate market began in 2007. Subsequently, the financial sector's only protection from under performing loans i.e. its capital buffers eroded steeply and almost instantaneously. Thus, the combined failure of the regulatory authorities and financial markets to focus on systemic risk or financial system as a whole resulted in huge financial meltdown. Regulatory authorities were focusing on individual institutions (TBTF) and failed to take a prudential approach which focuses on the stability of the whole system not just few institutions.

Systemic risk is very important issue both for the markets and the regulatory authorities, yet there is no consensus definition available. Generally systemic risk "refers to the possibility that a triggering event, such as the failure of an individual firm, will seriously impair other firms or markets and harm the broader economy" (FRB of St. Louis, 2009, p. 403) (Annexure 5 provides various definitions of systemic risk taken from a variety of sources). During the GFC of 2007, the "counterparty risk," also known as "default risk" has emerged as the most prime concern for the regulatory authorities if the United States. It seems pertinent to discuss and analyse this issue in some detail to understand the underlying dynamics of systemic risk. There are several forms of systemic risk that can be generated from the failure of a financial institution, especially during a financial crisis. The first is the counterparty risk that "exists in large part because of asymmetric information. Individuals and firms typically know more about their own financial condition and prospects than do other individuals and firms" (FRB of St. Louis, 2009, p. 407). The counterparty risk is matter of concern when a financial institution is highly interconnected to many other financial institutions and its failure can cause a ripple effect throughout the system (Acharya and Bisin, 2010). The case of American International Group (AIG) can serve as a classic example of the counterparty risk, which built up US$450 billion of one-sided CDS exposure on the so-called AAA tranches of securitized

products without any capital provisioning. Since all the trade followed the same direction, it means in the case of lose, the AIG's failure will definitely propagate and amplify throughout the financial system. Second is systemic risk, which typically appears when the unregulated financial institutions operating in the premise of the "shadow banking system" face bank runs like situation. The new model of banking (non-traditional originate to distribute model) has relied heavily on the short-term wholesale funding market for their business (Acharya et al., 2011). It can be explained by an example; the volume of repo transactions ascended from US$2 trillion a day in 1997 to US$6 trillion daily in 2007. Besides this money market funds accumulated over US$4 trillion in assets, compared with the US$8 trillion of deposits in the banking sector. All these funds were rolled over on a short-term basis and any sudden fund withdrawals in the anticipation of uncertainty (e.g. financial institutions health) can not only led the institution failure rather it has the ability to run through the entire system creating systemic risk (Acharya and Richardson, 2009). Summing up the argument, it is said that financial institutions were funding long term assets with the short term liabilities, most of these were less liquid assets which financial institutions cannot unload orderly. Third form of risk is the spillover risk that arises when one financial institution's trouble triggers liquidity spirals in the market leading to dampened asset prices and a hostile funding environment on the market (Acharya et al., 2011).

However it is important to note down that systemic risks are built up over time[37]. In the US, in the upturn of the business cycle, banks eased credit conditions due to their confidence, but in the downturn, the converse happened. This movement between credit conditions and the economic cycle is called as the procyclicality. This procyclical nature of risk-taking in financial markets leads to an over-leveraged and over-extended banking firms during the good

[37] The idea that the financial sector can amplify the business cycle (the concept of pro-cyclicality) dates back to Irving Fisher (1933)

times. Resultantly, financial markets as a whole become more vulnerable to a change in sentiments. Adrian and Shin (2008) have discussed the issue in detail and presented the empirical evidence to substantiate this phenomenon. They have tested and concluded that financial institution leverage is procyclical. Accordingly: "in the sub-prime mortgage market in the United States we have seen that when balance sheets are expanding fast enough, even borrowers that do not have the means to repay are granted credit–so intense is the urge to employ surplus capital. The seeds of the subsequent downturn in the credit cycle are thus sown" (Adrian and Shin, 2008, p. 438).

2.4.4. Inadequate Financial Governance

It is rational to debate about the advantages and disadvantages of a more transparent financial system. Yet transparency reduces the benefit of private information, which, in turn, affects the information collection mechanisms. The past crisis in the US, particularly the Panic of 1907, the Great Depression, and the LTCM crisis clearly illustrate that despite the fact that financial institutions are healthy individually; the asymmetric information environment has the potential to lead to run on the entire system. There are four types of institutions with different regulation and guarantee levels; these are commercial banks, investment banks (broker-dealers), asset management firms, and insurance companies. All these types of financial institutions have different regulatory rules but due to complexity of the financial system, there is lack of clarity from authorities and financial institutions exploit this situation and skilful escape the regulation. We have discussed in the above pages that mispriced government guarantees and excessive risk taking can led the whole system to collapse. Several factors contributed to increase the opaqueness of the financial markets over the time. There are several aspects that have contributed to this externality. First, the government regulatory approach and the incentive to get too –big- to- fail pushed the institutions towards the LCFI (Large complex financial Institutions).Government/authorities focus on micro regulation

resulted in literally lack of regulation for such complex financial institutions and the so called "shadow banking sector" and hedge funds thrived in the unregulated pockets of the financial markets. Financial institutions devised the ways to shift the risk exposure to the unregulated sector and theses institutions parked their assets off the balance sheet temporarily (e.g. SIVs), to get a temporary regulatory respite from the authorities by circumventing the required capital requirements (Acharya et al., 2010). This results in availability of more money to take on additional risky investments. The enormous magnitude of this activity in the shadow banking sector shows how it was easy for markets to get pockets in the unregulated markets without any scrutiny or recourse to law. Besides these evident regulatory loopholes, there was no one single regulatory body responsible for the management and regulation of LCFIs. Understandably, substantial regulatory arbitrage across regulators was allowed. Let's take the case of AIG as example: it was able to choose the Office of Thrift Supervision (OTS) as the regulatory body for its holding company because it had bought a small savings and loan. But the OTS clearly lacked the required expertise to supervise the insurer's parent company. Increased growth of AIG like financial institutions and their linkages and fragility has raised the prospect of extreme counterparty risk concerns which left to the private incentives proved a failure to internalize this extreme counterparty risk.

2.4.5. Complexity of the Financial Innovation

Financial innovations over recent years have increased the complexity and scale of the network of inter-relationships between financial institutions. Two kinds of housing-related financial innovations were central to the 2007 financial crisis. One relates to the originations of mortgages and the other relates to their securitization. Adjustable rate mortgages (ARMs) have been singled out as financial innovations contributing to the crisis in a contrast to fixed-rate mortgages. Alternative-A loans, popularly by the name of Alt-A loans are categorized between prime and subprime loans. Financial innovation in the Alt-A loans consists of

variable monthly payments or the interest's only payments options like ARMs. It allowed the borrowers very flexible way to choose their payments each month to a pre-specified minimum (Shefrin and Statman, 2011, pp. 28-30). Another example is rapid increase in the securitization and OTC derivatives products. These new financial products were introduced to archive achieve high nominal returns without any significant increase of risk of the financial institutions. However, it was not that these products were less risk but financial industry executives and regulators both were failed to assess the underlying hidden risks of these exotique financial products. Initially, massive growth of securitization was praised by the majority financial industry commentators and analysts as a means to reduce banking system risks. Pre-crisis days witnessed a consensus on the Wall Street that the originate–to-distribute model of banking has diversified the redistributed risks more accurately. It was only when actually crisis broke out, the banks and other institutions and regulators realized that diversification of risk had achieved as it was anticipated. According to originate-to- distribute model of lending ,lenders have had less incentive to apply strict credit controls since the loans were expected to only stay on lenders' balance sheets for a short time (Acharya et al., 2011). Buying a home was made easier when down payments were reduced from the conventional 20% to 15% in 2004, and 10% in 2005. It was even easier when mortgage loans known as no-documentation or limited- documentation loans ('liar loans') were offered by the financial markets where buyers could state whatever income and assets they pleased, knowing that no one would check (Shefrin and Statman, 2011, p. 30).

2.4.6. Myopic Risk Management Practices of Financial Institutions

Financial institutions relied heavily on the data of recent past for the future predictions and forecasting about profits and performances. The stable macroeconomic environment in pre-crisis era led investors to dramatically underestimate the likelihood of any crisis like event.in this environment, regulatory authorities also allowed these institutions to internalize risk

management frameworks. However the internal risk management models in banks and other financial institutions turned out to be poor representations of how market participants would respond in an anticipation of crisis or volatility. Specifically, the use of value-at-risk (VAR) model by the banks, which used the volatility of asset prices over the recent past to quantify the risk entailed in marketable securities, increased the tendency of financial markets to underprice risk in good times and contributed to the herding tendencies of markets (Acharya and Richardson, 2009). Stress testing also proved insufficient. Theoretically, stress tests enable banks to assess the impact of some extreme events which otherwise are not captured by the traditional risk-management models. However, stress testing technique has several shortcomings; it failed to assess the system wide buildup of risks or failed to capture the impact of some systemic shocks. It completely failed to anticipate and assess the impact of liquidity shortages and the transmission of through markets in the distressed conditions (Acharya et al., 2011). Credit rating agencies (CRAs) also failed to guide investors to fully evaluate the financial risks of new compelled the financial markets to collapse.

Summing up the discussion of the above section, it is clear that 2007 financial crisis was not a result of one single factor/policy failure. All above discussed marker failures played a major role in the eruption. Sweeping deregulation of the US banking system paved the way for the whole sale implosion. The crisis has indicated that free and unfettered financial markets are neither efficient nor stable and they failed in their basic job at setting prices.

Section 3: Lessons from the GFC OF 2007

In this section of the study, we will discuss and emphasize the most imperative lessons we can and we should learn from the GFC of 2007. Individually, none of these lessons are guaranteed to make the financial system perfect but taken together; they can provide stronger safeguards for the stability of financial system and the economy. It is important to learn from the past

errors in order to correct the future with better regulations of the financial markets. Every crisis has some opportunities and some threats; while the current crisis has undermined the economic growth and led the world economy into severe stagnation. It has also led to some fundamental changes in thinking about the role of financial regulations and the intelligent government intervention in the economy (Bordo and Lane, 2010b, p. 30-31). We need to learn two types of lessons from the events of the last four years if we are to successfully combat future crisis that might arise. These are the theory oriented lessons and policy oriented, although both type of lessons are linked and interconnected but for the clarity of analysis we will discuss these separately.

3.1. Some Theory Oriented Lessons

The failure of main stream macroeconomic theory (and the neoliberal growth model) has been widely recognized during and after the 2007 financial turmoil. It is the ideas that lie at the heart of mainstream macroeconomics providing the intellectual justification of the economic policies which abetted to create 2007 financial crash of 2007 (Ormerod, 2010). As we have discussed in the first chapter and our analysis in the second chapter established that the fundamental cause of the collapse of 2007 was the uncritical acceptance of the efficient markets hypothesis (EMH) and the belief in self-correction of financial markets by the influential US policy-makers sitting in most powerful institutions (McCombie and Pike, 2010). The EMH did a great harm, by encouraging foolhardy behaviour of large corporate players in financial markets and in discouraging any serious attempt at regulating their activities. According to King (2011), the mainstream economists were the mental prisoners of formal models that made GFC unimaginable. Broadly acknowledged to be a tail event for neoclassical economics, it was not an unexpected event for the most of non-neoclassical economists from the Austrian and Post-Keynesian schools (Keen, 2012). Mainstream macroeconomists were so self-assured that any call from the heterodox group were largely

ignored and dismissed as unscientific. The Keynes's emphasis on the pervasive nature of Knightian uncertainty rather than risk, particularly in the financial markets was not taken seriously. In the same vein, the insights of Post-Keynesian economists like Minsky were completely ignored who warned about the inherent instability of the financial markets long ago. Had the Minsky would alive, the 2007 subprime crisis not have surprised him, whose FIH hinges on the emergence of increasingly risky financial innovations as memories of the previous crisis fade (King, 2011). The belief that "markets work to promote the public interest" gained in popularity in the pre-crisis decades; Minsky questioned rightly: But what if they don't? Then a system of constraints and interventions can work better. Likewise the work of some other post-Keynesian economists who emphasized the non-ergodicity[38] of capitalist economies (Davidson, 1982-83, 1991, 2008a, 2008b, 2009a and 2009b) was implicitly seen as irrelevant. The subprime crisis raised some fundamental questions about the usefulness of mainstream economics (Allington *et al*., 2011). Greenspan (then governor of Fed) conceded before Congress on October 23rd 2008 that "the modern risk paradigm had held sway for decades. The whole intellectual edifice, however, has collapsed". The key methodological lesson for macroeconomics emerges is the need for a detailed understanding of the underlying dynamics of the institutional framework, rightly articulated by Akerlof (2007, p. 28) as "in contrast to reliance on statistical testing, disciplines other than economics typically put much greater weight on a naturalistic approach. This approach involves detailed case studies. Such observation of the small has often been a key to the understanding of the large". At times, a case study sheds more light than any number of regressions. According to Davidson, "the financial crisis of 2007-2009 should have been sufficient empirical evidence to indicate that

[38]Ergodic axiom means that the future is predetermined by the past and present state of affairs (Paul Samuelson champion this idea) and knowable probability distributions govern future events. While Davidson praises the deductive approach because he believes that axiomatic basis of the mainstream theory needs to be replaced. Stated otherwise, the ergodic axiom imposed the condition that the future is already predetermined by existing parameters therefor it is possible to forecast future by analyzing the past and current market data to obtain the probability distribution governing future events.

the axiomatic basis of the mainstream theory needs to be replaced" (Davidson, 2011, p7). King (2010) has explained that at least six mainstream doctrines have been refuted by the 2007 crisis and the most important of these is the failure of the is the rational expectations which when applied to financial transactions, generates the "efficient market hypothesis" to produce the 'right price' and therefore require only the lightest form of government regulation. Another refuted doctrine relates to the monetary policy that only interest rates matter in mainstream macroeconomics. Federal Reserve's monetary policy stance has been severely criticized and inadequacy the interest rates as a tool to dampen asset prices bubble is highlighted. Post- crisis situation encourages the revolutionary thinking in the field of macroeconomics and finance and most important issue concerns the regulation of finance (examined in the 4th chapter of the study). Contemporary capital markets are much less regulated than capital markets in the period from 1945 to 1973. These unregulated or less regulated segments of the financial markets are termed as the fundamental factor behind the increasing frequency of financial crisis during the last two decades particularly. Experience of EMEs corroborates this argument that deregulated their financial markets without laying down necessary regulatory frameworks. Weakly regulated international capital markets are prone to crisis but it seems that till the near future macroeconomics theory has to deal with weakly regulated capital markets which allow systematically erroneous valuation of assets (Chatelain and Ralf, 2012, p. 2).

The capacity of the standard neoclassical models in the aftermath of 2007 crisis is widely questioned (McCombie and Pike, 2010). It has been argued that there is need for a paradigm shift in macroeconomic theory taking it away from "toy models" towards an approach that required a detailed understanding of the financial institutions and the impact they have on the overall economy. However, at the time of writing, this hope is rapidly diminishing as the

status quo seemed to be maintained by policy makers and influential financial institutions. The financial history of the last decade has shown the need for policy-makers and regulators to adopt a radical new approach to monetary policy. As the old adage of the philosopher Edmund Burke says "those who do not know history are destined to repeat it". It has already happened dozens time in past and again in 2007 and it is probable it will happen again, in a decade or so, unless the lessons are finally learnt (Allington et al., 2012, p. 25). The way forward, therefore, may be to include the insights of the post- Keynesian economist Minsky to understand the internal dynamics of financial markets and behavioural economics is offering some insights in this regard. Akerlof (2001, pp. 367-8) has argued that "in the spirit of Keynes's General Theory, behavioural macroeconomists are rebuilding the microfundations that were sacked by the New Classical economists". Sixty years after, we share the same personal view as Friedman (1953, p.41-43): "Some part of economic theory clearly deserves more confidence than others... The weakest and least satisfactory part of current economic theory seems to me to be in the field of monetary dynamics, which is concerned with the process of adaptation of the economy as a whole to changes in conditions and so with short-period fluctuations in aggregate activity." Right now it is difficult to assess to which extent the forthcoming macroeconomic theory will take into account a weakly regulated financial sector and the rejection of the EMH. Apparently it seems that the key complementary assumptions in the current way of doing mainstream macroeconomics may not be changed for a long time (Chatelain and Ralf, 2012, p. 24) at least for foreseeable future (Ormerod, 2010).

3.2. What Have We Learned About Market Efficiency

It is argued that 2007 GFC has proved to be tail event for the neoclassical macro theory. Crisis highlights clearly that prevailing theoretical model is an abstraction from reality. Theory can never be perfect but it must be organized in a way to incorporate maximum thoughts and actions of the real economic world and finance is the reality of economics which

mainstream macro theory has ignored. As Krugman (Sept 2, 2009) has rightly pointed out that economists will have to do their best to incorporate the realities of finance into macroeconomics. EMH, a representative of the mainstream macro theory has proved a failure because at a theoretical level, it has several obvious limitations; the most important limitations stems from the fact that EMH is a "pure exchange" model of information in markets. It is completely muted about the "supply side" of the information market: it ignore some very vital aspects of the supply side, e.g., how much information is available, what are the sources of this information (whether it comes from accounting reports or statements by managers or government statistical release), what is the reliability and flow of information and lastly the regularity of extreme events affecting the markets. Thus EMH addresses only the demand side of the market and articulate only that, *given* the supply of information; investors will trade on it until in equilibrium there are no further gains from trading. Consequently, the EMH is silent about the shapes of return distributions and how they evolve over time. Yet another shortcoming of the EMH is obvious that assumes the markets themselves are costless to operate. Similarly, the EMH implicitly assumes continuous trading, and hence ignores liquidity effects altogether. It is evident from the critical analysis of the of EMH that it adopts a very simplified view of financial markets and 2007 GFC has made it clear that anomalies in the theory of market efficiency are abound (Ray Ball, 2009, p. 12). Yet, the hard core facts are there and it has been 5 years in crisis but the impact of the mainstream macroeconomic theory led by the belief in the theory of efficient markets has proven to be durable and it seems that it would continue despite its inevitable and obvious limitations (Ball, 2009 , p. 16).

3.3. Some Policy Oriented Lessons

GFC of 2007 has exposed flaws in the pre-crisis policy framework and has forced policymakers to explore new policies during the crisis, and asked us to think about the

architecture of post-crisis macroeconomic policy (Blanchard et al., 2010, p. 17). New financial techniques and instruments arising from the work of, *inter alios*, Merton (1973) and Black and Scholes (1973) by the 1990s had putatively enabled risk to be hedged and the possibility of extreme adverse events to be nullified (Jarrow, 1999). In this environment of thinking and policy making, the buzzword was that financial markets needed only light, or perhaps no, regulation at all. An analysis of history and particularly the US financial history of last three decades substantiate that the warnings about the developing and inherent fragility of the US financial system were there to be seen. The most notable warning was provided by the collapse of the hedge fund LTCM in 1998 and similar episodes which we have examined in the first section. The LTCM collapse is particularly important episode, because Scholes and Merton (winners of the Memorial Nobel Prize in Economics in 1997) were partners (with nine others) in LTCM and Fed was fully aware of the consequences of its failure can unleash on the whole financial system. But authorities did not learn the lesson and no major regulatory measures were taken to curtail the recurrence of such. There was no major change in the regulation of hedge funds or similar financial institutions despite the recommendations of the 1999 Report of the President's Working Group on Financial Markets. Nor did the collapse have any major influence on the continuing development of increasingly sophisticated and ever more complex financial instruments. Despite these episodes of instability, the faith of influential policy-makers in the EMH remained largely unshaken. Thus the failure or the neglect to learn any from the past episodes like the collapse of LTCM virtually led to the subprime crisis of 2007 (Allington et al., 2012, p. 4).

Blanchard et al. in their influential paper "*Rethinking Macroeconomic Policy*" have argued that several pre-crisis policy guidelines were flawed or even incorrect. Crisis has clearly revealed that macroeconomists, policy makers and the central bankers knew less than what

they thought they did. Self-correction of financial markets has proved futile in 2007, latter on US government acted through the central bank to rescue the financial system. Factually the crisis has forced central banks to extend their traditional role of lenders of last resort in particularly advanced economies like USA. Central banks have extended their liquidity support to non-deposit-taking institutions and in some other cases Central banks intervened directly (with purchases) or indirectly (through acceptance of the assets as collateral) in a broad range of troubled asset markets. The argument for extending liquidity provision is quite compelling, even in normal times and seems indispensable in the crisis like situation. As we have discussed in the first chapter, Minsky has emphasized the role of central bank as a LOLR in his insights and he believed that due to strong interventions of the Fed in the post-world war11 era, kept the US financial markets relatively stable. According to Anna Schwartz*, "*The new group at the Fed is not equal to the problem that faces it. They need to speak frankly to the market and acknowledge how bad the problems are, and acknowledge their own failures in letting this happen. This is what is needed to restore confidence. There never would have been a sub-prime mortgage crisis if the Fed had been alert" (Schwartz, The Sunday Telegraph, 14th January 2008).

The crisis of 2007 has reopened the debate about the role of monetary policy to control the asset price booms and increases in leverage (IMF, 2009a). The first lesson can be that it's best not to burden monetary policy with too many mandates. Take the case of US e.g., Under the Federal Reserve Act it has a dual mandate with a statutory obligation to main price stability and ensures maximum employment. This dual mandate already demands Fed to accomplish the two objectives with a single tool, i.e. the management of short-term interest rates. However, the correlation of the two objectives is high enough that this apparent insufficiency of tools is rarely a problem. Currently, the inflation objective and employment objective call for monetary policy accommodation and it would be a tough job for the regulator if some

more objectives are added to hit with only one tool, especially when these objectives are not correlated. When it is argued that monetary policy should pursue a third objective i.e. to foster systemic stability by attacking incipient asset bubbles, it becomes a great concern for the Central banks due to its limited capability and capacity to detect the asset bubbles properly and well in time. Even if the Fed could accurately detect a bubble in real time, and even if we decided that a bubble-pricking exercise would be warranted, monetary policy is too blunt an instrument for this task. Any attempt to so would affect a whole range of macroeconomic and financial variables well beyond the targeted asset prices. Any attempts to counter a hypothetical future bubble would end up weakening the efforts of Central banks to achieve the stabilization benefits embodied in the dual mandate. If monetary policy is the right tool to achieve the goals for economic growth and price stability then its effectiveness in achieving these objectives must not compromised by including additional mandates. In the case of EMEs these issues become even more complicated when central banks don't not have great autonomy and operational independence like the US or UK.

The crisis has duly exposed the importance of interconnections among the banking system, capital markets, and payment and settlement systems. The approach of focusing on only one part of the financial system (micro approach) can obscure vulnerabilities. Nevertheless, the high degree of interconnectedness across the financial system has a number of implications. Firstly, supervision must not just be vertical i.e. firm by firm, or region by region, but also horizontal i.e. looking broadly across banks, securities issuance institutions, markets and geographies. Second, this means and demands that supervisory practices need to be revamped accordingly. Supervision needs to be well coordinated and multi-disciplinary in nature supported with a flexible and dynamic governance process which can able to identify the important elements of systemic risk. It also has the capacity to elevate those concerns to the appropriate level and can be responsive enough to act on those concerns in a timely manner.

This requires the right people, with the right set of skill operating in a system with the right culture and legal framework (Dudley, 2009).

The most important lesson to be learned is that additional safeguards are necessary for the stability of the financial system and the best of such safeguards are the adherence to some basic regulatory principles that require minimal discretion in their real-time execution. Over regulation is as bad the under-regulation. The GFC of 2007 has accentuated the lesson that financial regulation needs to be more dynamic, taking account of financial innovations and how they affect the financial sector and real economy. Policy-makers and regulators should not rush to enact new rules altogether, but rather embark on a thorough review of the existing regulatory architecture and arrive at considered conclusions on what needs to be changed. The rules should put a brake on irresponsible lending and speculation but also preserve the benefits of open and flexible capital markets. A holistic approach is recommended to plug in regulator loopholes in the system rather than introducing new and complicated layers of rules and regulations. Practically, the theory of self-regulation of markets has fail and the main stream macroeconomic approach to supervise and regulate the financial sector has proved futile. 2007 GFC emphasizes another key lesson that regulatory policy must have an enhanced macro prudential orientation to address systemic financial risks and it must be complemented by the micro prudential regulation. Although, macroprudential policy is a not panacea and cannot stop financial crisis; it is helps to understand the overall risks and if done properly can lower the costs of the financial crisis (Regulatory lessons and challenges are discussed in detail in the 4th chapter of the study).

Conclusion

This chapter has shown that the 2007 GFC was a result of a combination of macroeconomic failures, financial markets failures and the regulatory failure. Although there is a long list of

causes but our analysis highlights the factors that were more causally significant than others.The main conclusion is that while the subprime mortgage market triggered the crisis, but its deeper causes have roots in the flawed and exhaustive paradigm of neoliberal growth that US has been following since 80s. Deregulation of financial markets and resulting unchecked financial innovation are important part of the macro explanation of the crisis. Unrestrained advancement in the securitization, derivatives and off balance sheet entities designed to evade capital requirements and regulatory capture is very particular feature of the 2007 GFC. Nonetheless, failure of regulatory policy and markets failures played a decisive role but fundamentally the neoliberal growth model is to blame as it needs bubbles to grow. This chapter highlight several important lessons underscoring the implications for economic thought, theory and policy. We have learned that monetary policy alone cannot ensure economic and financial sector stability. We have learned that *self-correction* of free markets is an illusion and a credible system of market discipline supported by strong prudential regulation is needed. The apparent failure of the *efficient markets hypothesis* will have ramifications throughout economics and finance, and requires a thorough rethinking about the contemporary paradigm. We have attempted to provide a broad, theory-based diagnosis of what went really wrong in 2007. Surely this diagnosis would lead us to suggest some remedial measures i.e. the regulatory reforms that will reduce the frequency and depth of such occurrences in the future (this issue is discussed in the 4th chapter of our study)

After debating the evolution and origin of the GFC of 2007, it is pertinent to discover the channels of its contagion and macroeconomic impact EMEs. In this aim, the next chapter shed light on the issue of contagion of the GFC to EMEs and presents an in-depth analysis of their policy response to contain it.

CHAPTER 3: FRAGILE FINANCE GOES GLOBAL

A Critical Analysis of Macro-Effects of the GFC on EMES and Policy Responses

"The problem is that the new theories, the theories embedded in general equilibrium dynamics of the sort that we know how to use pretty well now— there's a residue of things they don't let us think about. They don't let us think about the U.S. experience in the 1930s or about financial crisis and their real consequences in Asia and Latin America. They don't let us think, I don't think, very well about Japan in the 1990s.
ROBERT LUCAS (BIS Papers No 66, p. 362)

The 2007 GFC has marked the largest shock to the world economy in the post-war era. Global economy fell six percentage points from its pre-crisis peak to its trough in the run up of crisis. This huge financial implosion in most advanced and financially sophisticated economy rapidly transmitted to EMEs[39] through various channels. The Lehman Brother's bankruptcy in September 2008 led to a financial volatility in EMEs financial markets; although there is considerable variation on the impact of the crisis on EMEs financial markets. EMEs have become prominent on the world economic stage over the last two decades, accounting for a substantial fraction of global economic growth. In particular these economies play a significant role in international trade and financial flows, entailing major shifts in the patterns of global financial and trade linkages. EMEs share in global financial wealth has increased considerably over the years (7% in 2000 to 21% in 2010 to and it is forecasted to reach 40% in 2020) and these developments are likely to have wide-ranging implications for the structure of the global economy. Before the crisis, policy makers were confident that EMEs had become more resilient to shocks originating in advanced countries. But the 2007 GFC has cast a shadow over the ability of EMEs to insulate themselves from such developments. Still, the EMEs as a group have weathered the global recession better than the

[39] Originally, Concept of EMEs brought into fashion in the 1980s by then World Bank economist Antoine van Agtmae. According to IMF; Argentina, Brazil, Bulgaria, Chile, China, Colombia, Hungary, India, Indonesia, Latvia, Lithuania, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Romania, Russia, South Africa, Thailand, Turkey, Ukraine, and Venezuela are termed as EMEs.

advanced economies but degree of resilience among the various EMEs varies considerably due to disparities of size, depth of financial markets and other macroeconomic fundamentals.

Financial crisis in EMEs have been part of the economic landscape since the early 1980s and have coincided with the implementation of financial liberalisation and deregulation policies. Collectively these policies led to an increased integration of EMEs with international financial markets (Agosin and Huaita, 2011) and make these vulnerable to various external shocks and contagion of instability. Since majority of these EMEs lack the proper regulatory and superior frameworks so hastily deregulated domestic financial sector become of source of instability and vulnerability leading to various types of banking, currency and debt crisis.

Table 3.1: Macroeconomic Indicators (EMEs vs AEs)

	GDP Growth		**Investment/GDP**		**Saving/GDP**		**Fiscal Balances/GDP**	
Period	AE	EME	AE	EME	AE	EME	AE	EME
1980-89	3.07	3.48	23.11	24.06	21.72	22.62		
1990-99	2.73	3.61	22.15	25.76	21.5	22.81		
2000-09	1.78	6.09	20.71	26.95	19.68	29.62	-3.22	-1.55
2010-15*	2.50	6.65	19.64	31.51	19.07	33.36	-5.31	-2.28
*IMF Forecast		AE: Advanced Economies			EMEs: Emerging Market Economies			
Source; IMF World Economic Outlook								

Unlike the previous crisis episodes, the 2007 GFC has specific feature that it has its origin in the most advanced financial markets and has spread to EMEs through financial and real sector channels. However there is significant gradation in individual crisis experience, in which some EMEs recovers quickly from the crisis, some recovers steadily and yet some others recovers slowly. Korea, Mexico, Pakistan and Turkey remained less resilient while the Malaysia, Thailand, Brazil, Argentina, India, Vietnam and Chile remained resilient and seemed well prepared to face this crisis. Unlike the previous episode of financial crisis, the seeds of the recent crisis were sown in advanced economies particularly the US. The primary

findings our discussion are that the EMEs who had improved policy fundamentals and reduced vulnerabilities in the pre-crisis period reaped the benefits of the various reforms introduced during the 2007 GFC. Specifically, we would like to emphasize few points here that; firstly, the initial impact of the crisis was less pronounced in EMEs that had better pre-crisis external vulnerability indicators. Foreign exchange reserve holdings also played its role to protect EMEs from the sharp rise in global risk aversion. Secondly, the EMEs who have a more policy space in the run up of the 2007 crisis were able to react more aggressively with fiscal and monetary policy due to their relatively less binding financing constraints. Thirdly, those EMEs recovered more rapidly who introduced bigger fiscal stimulus plans, had stronger pre-crisis macroeconomic fundamentals, and had faster growing trading partners. Fourthly, policy challenges for the all EMEs are not the same; there is considerable heterogeneity in the required policy framework as EMEs got exit from the crisis, nevertheless accommodative policies of the advanced economies (quantitative easing) may constrain the policy space enjoyed by the EMEs (Moghadam, 2010, p 1). A comprehensive analysis of resilient EMEs with non-resilient is carried out to identify the key characteristics that have made these economies more or less vulnerable to a transmission of crisis from the advanced economies. This analysis will enable us to carve out required policy response in form of required regulatory architecture to have more stable and resilient financial markets in future.

Main objective of this chapter is to structure evidence as a first step in linking different crisis types to a set of policy options chosen under varying institutional frame-works before and during a crisis in the EMEs. With this background, the 3rd chapter is alienated into three sections. Section1 presents a brief review of the financial liberalisation and deregulation of the EMEs and particularly dynamics of financial crisis in EMEs. This section also documents the main transmission channels of contagion of the 2007 GFC. Section 2 presents the case

studies of EMEs who remained resilient to the 2007 GFC. Macro-level tendencies of the direct effects of the GFC on these EMEs are discussed in this section. The overall efficacy of the policy response and what each has done to insulate their economies from the vagaries of financial globalization is analysed here. Section 3 gives an in-depth analysis of those EMEs who could not shield off from the macroeconomic impact of the GFC and remained non-resilient to this global shock. A critical analysis of the policies of financial liberalisation and deregulation of EMEs in the last deceased as a source of financial crisis is also presented in this section as an implication of our analysis. It also highlights the short and long term challenges pertinent to the EMEs. Discussion of the chapter is closed by a brief conclusion of the whole chapter.

Section 1: Financial Liberalisation, Financial Crisis and EMEs

The dynamics of financial crisis and its trigger in EMEs are altogether different from advanced economies (AEs). Sachs argue that developing countries fall into international financial crisis for a variety of reasons, including fiscal profligacy, exchange rate mismanagement, international financial shocks, financial liberalisation, and weaknesses in the domestic banking sector (Sachs, 1995, p. 2). We have discussed the issue of financial crisis in the context of financial liberalisation and deregulation polices of the EMEs in the flowing.

1.1. Specific Dynamics of Financial Crisis in EMEs

Generally in EMEs, the financial crisis develops along two basic paths: either the mismanagement of financial liberalisation and globalization, or severe fiscal imbalances besides there are some other additional factors can also initiate the trigger of the crisis. In the following, we have identified here a more generalised pattern or framework of as financial crisis occurred in the EMEs.

Firstly, it is *mismanagement of financial liberalisation/globalisation* in EMEs. Generally EMEs have experienced financial crisis when these countries liberalize their financial systems by eliminating restrictions on financial institutions and domestic financial markets (de-regulation of financial industry and privatisation of banks, insurance etc.). This process is known as financial liberalisation leading these economies to open up international capital inflows fuelled by the globalisation (Mishkin, 2008). However, the resulting lending booms that accompany financial liberalisation in EMEs are typically marked by risky lending practices where domestic banks borrow from abroad involving in more risky ventures in a contrast to their previous traditional way of doing business. Hot money pours into local financial markets and system, but due to inadequate institutional structure and weak regulatory frameworks, the likelihood of bust and crisis increased manifold. Thus, the mismanagement of financial liberalisation/globalization is the most common culprit in several EMEs for the repeated events of financial crisis; the crises in Mexico in 1994 and in many East Asian countries in 1997 (South Korea, Malaysia) but also in Turkey in 2000-2001, corroborate this view.

Secondly, *presence of severe fiscal imbalances is another important factor.* The patterns of government financing for public spending can also lead EMEs on a path toward financial crisis. Financial crisis in Argentina in 2001–2002 was of this type; other examples of such crisis, for example Chile in 1983 and 1986; in the recent past, Russia in 1998, Ecuador in 1999, Malaysia in 1997 (known as excessive fiscal pilferage of Mahathir regime) and Turkey in 2001 have some elements of this type of crisis.

Thirdly, *there are some additional factors besides above two stated reasons.* Besides the above cited main factors, there are some other factors also which have the potential to

destabilise an economy and can play a key role in financial crisis eruption. Sometimes monetary tightening or easing in advanced economies can affect interest rates in the trading partners (US interest rates affected Mexico). Furthermore, in higher interest rates environment, high risk firms are likely to pay these high inters rates and therefore "adverse selection" problem is aggravated in the financial system. In this situation a firm's cash flows are reduced due to increased interest's rates, the firms are left no choice but recourse to external financing where asymmetries are even more.

1.2. An Appraisal of Financial Liberalisation/Deregulation Policies in EMEs

The relationship between finance and growth has been passionately debated in the context of EMEs during the last two decades. Levine in his excellent survey (2004) has emphasized about this positive relationship. Nonetheless, much before Levine, Walter Bagehot in 1873 has pointed out that English entrepreneurs were able to borrow quite easily from financial markets for their long term investment projects which indeed contributed positively to the economic growth of England.

Since the heydays of Reagan-Thatcher regime (Washington Consensus policies or neoliberal recipe of growth of late 70s) EMES have been encouraged to open up and integrate to international financial markets in a belief that financial markets allow the proper allocation of saving to productive investment. Thus EMEs liberalised their financial markets and removed restrictions on the trade and finance. Financial liberalisation is typically followed the deregulation of domestic financial and banking sectors. Nevertheless increased capital inflows positively effects the GDP, investments, unemployment but these development also implicitly leads to the financial fragility of the system because of the risky nature of the investments and lack of institutional and regulatory structures. EMEs financial history fully corroborates this argument. An overview of theory and empirical literature on financial

integration and liberalisation in the EMEs is very important here to understand the dynamics of financial crisis in EMEs. In this vein, we briefly analyse the protracted journey of EMEs towards trade and financial liberalisation in the following.

During the 1950s and 60s, financial markets of most of the EMEs (then known as developing countries) were highly distorted and representative of repressive financial policies[40]. But during the 1970s, policy makers from the advanced financial institutions and countries advised the governments of developing economies to minimize government intervention because strict regulations and extensive intervention could be the sources of distortions in the financial markets. Majority of the Latin American region EMEs opted for the financial liberalisation policies during the 1970s and early 1980s. During the 1980s, global trend for deregulation and reforms started in many Asian EMEs embarked upon the road of financial liberalisation and introduced the market deregulation (and privatisation of state owned enterprises) policies. These reform[41] policies were set out to (Rostom, 2007, p. 3):

a. *Abolish interest rate ceilings*
b. *Ease the entry of new financial institutions into the market*
c. *Lift restrictions on foreign currency payment*
d. *Open domestic financial systems to competitive market conditions.*

Basic objectives of these reforms were to increase the role of market forces in exchange and interest rate determination and credit allocation. It was aimed that these developments would subsequently lead the market forces to drive much cherished economic growth in EMEs. Thus several EMEs abandoned the financial repression policy and the halt the government interventions in the financial sector. These deregulation[42] policies were in line with the policy

[40]Denizer et al. (1998, p. 3) define 'financial repression' as "a set of policies, laws, formal regulations and informal controls, imposed by governments on the financial sector that distorts financial prices, interest rates and foreign-exchange rates, and inhibits financial intermediaries from performing at their full potential."

[41]The term financial reform is used interchangeably with [the] terms financial liberalisation, financial deregulation and financial deepening."(Bascom, 1994, p. 1).

[42] Generally, financial deregulation involve removal of restrictions on capital inflows, removal of state regulation from domestic financial sector and removal of political controls from the central bank (Patnaik 1999). Subsequently, financial

advice of the international organizations including the World Bank and the IMF (World Bank, 1989). It appealed the EMEs who were constrained by the lack of access to international finance. Resultantly, financial liberalisation becomes an irresistible trend in most of the emerging and developing countries (Rajan, 2001). Integrated capital market has been considered necessary to get the benefits (e.g. access to international finance for the development of national economies) from the globalised financial markets and EMEs become most cherished destination for international investment funds in the new age of global capital markets. However, it has been also claimed that majority of EMEs have become economically and financially vulnerable from the destabilising and fragile trends of this highly praised financial market integration (Lane et al. 1999) and financial liberalisation. Various economic and financial crises that occurred in the EMEs in the follow up of liberalisation policies has highlighted that these policies were hastily implemented in an incorrect order and sequence. Therefore various events of financial instability and the crisis have clearly established the necessity of appropriate and suitable sequencings of financial of liberalisation reforms (Hallwood and MacDonald, 2000). In-depth study and the scientific work about the financial liberalisation policies for the EMEs has been produced by Williamson (1982), McKinnon (1982), Edwards (1984, 1986), Corbo and deMelo (1987), Edwards and Edwards (1987), Kahkonen (1987), Fry (1988), Collier and Gunning (1992), Falvey and Kim (1992), Williamson and Mahar (1998), Rajan (2001) and Rajan and Bird (2001). We have presented a very brief review of the most relevant literature here to set the base of proceeding argument that EMEs has been vulnerable to the crisis since these have started the trade and finance liberalisation and GFC of 2007 is not exception in this context.

sector of an economy is integrated with the international financial sector rather than a part of the domestic economy. Therefore, it is also argued that the deregulated markets serve the interests of global financial institutions rather than the endogenous economic interests (Beder 2006, p. 59).

1.2.1. Nexus of the Financial Liberalisation and Financial Crisis in EMEs

Economic literature (theoretical and empirical both) is abundant on the connections between financial liberalisation and financial crisis as the subject has been tremendously debated during the last two decades. There is considerable theoretical and empirical evidence in literature to suggest that financial integration of EMEs has led to a higher incidence of crisis (Jeanne and Gourinchas, 2005). Traditional views on the financial liberalisation (capital account liberalisation) has been reflected in the work of Jung (1986), Gelb (1989) , Guidotti and De Gregorio(1992) and King and Levine (1993) support the positive role of the higher capital inflows and posits that these inflows provide incentives for policy makers to increase efficiency in economic policies.

Sauve (1999) has attributed the high trade and investments in Asia to the adoption of financial liberalisation policies. While Brooks and Oh (1999) have taken the opposite position and argued that the Asian currency crisis revealed risks (high external debts, over-investments) associated with financial liberalisation. Goldstein and Turner (1996), Caprio et al (1996), Demirguc-Kunt and Detragiache (1997a, 1997b), Honohan (1997), Williamson and Mahar (1998) and Chirathivat (1999) hold the view that high capital flows imply unstable and disruptive international capital market; therefore they suggest the need for tight capital controls to stabilise the EMEs from these unstable trends. It has been observed that massive capital flows (these are speculative in nature) are followed by a financial crisis. These inflows also accompanied by large shifts in interest rate spread between EMEs and the advanced global financial markets. On the other hand, the proponents of liberalisation and open capital accounts believe that high capital inflows results in enhanced efficiency in the economy. Surveys by Dooley (1996) and Eichengreen *et al.* (1998) have provided very comprehensives and reasonably robust set of conclusions. Accordingly, financial restrictions allow the

authorities to insulate domestic interest rates and financial controls can also change the composition of flows by reducing the proportion destabilising short-term capital flows. Controls also provide domestic authorities some anchor to realign their exchange rates in situation of crisis and lastly, crises are not always the result of weak macroeconomic fundamentals, rather they can be self-fulfilling. Generally, the economic literature seems to be converging to the view that financial liberalisation in the absence of necessary regulatory frameworks contributes to both banking and currency crisis. Eichengreen, Rose and Wyplosz (1995) by studying the advanced economies have find that the presence of capital controls reduces the probability of a currency crisis. This assertion is also confirmed by Rossi (1999) with a data sample of both advanced and developing countries.

Several banking crisis have been preceded by financial liberalisation process in the EMEs of Asia and Latin America. Diaz-Alejandro in his paper in 1985 has formally noted this link. Kaminsky and Reinhart (1999) have dealt the issue in detail in their empirical study. The work of Caprio and Klingebiel (1996), Niimi (2000), and Gruben, Koo and Moore (2003) have contended that banks have greater probability to fail in a financially liberalised regime as compared to financial repression. Corsetti, Pesenti and Roubini (1998) and Furman and Stiglitz (1998) have all pointed out towards financial liberalisation as the key culprit behind the devastating Asian financial crisis of 1997 that engulfed various EMEs of the whole Asian region. Hellman, Murdock and Stiglitz (2000) have argued that in a competitive environment induced by financial liberalisation and deregulation of banking system, the increased competition among banking institutes fairly erodes a bank's franchise value thereon these institutions have no incentive to avoid risk.

Demirgüç-Kunt and Detragiache (1998b), taking a sample of 53 developed and developing countries, fond a strong effect of the liberalisation on the banking crisis. Mehrez and Kaufmann (2000) find this impact with a lag of 3 to 5 years. Likewise, Kaminsky and Reinhart (1999) have examined the 20 countries data and conclude that currency and banking crisis are "closely linked in the aftermath of financial liberalisation". To describe some channels of this impact; it is elaborated that domestic financial liberalisation opens up new possibilities for the banking and financial sectors which often results in excessive risk taking. In the absence of adequate supervision and regulation, this risk taking behaviour of the banks can leads to crisis like situation. Another channel is through the lifting up of controls on external capital that encourage huge capital inflows which are highly vulnerable and destabilising leading to crisis ultimately. The related literature on capital inflows shows that large inflows tend to be followed by sudden outflows (*sudden stops*) with drastic impact on the exchange rate (Reinhart, Calvo and Leiderman, 1994).

Dooley[43] (1996) contends that adverse effects of financial liberalisation on any economy occurs when the liberalised economy lack the proper banking regulation framework and supervisory apparatus. Its institutions are weak, corruption is widespread and "law and order" situation of the country is poor (Wyplosz, 2001, p. 6). Empirical studies by Hutchison and McDill (1999) found that likelihood of a financial crisis increased in a liberalised financial system, particularly when the institutional support was weak or absent. In the same vain Kaminsky and Reinhart (1999) concluded on the basis of their empirical study that eighteen times out of the twenty six banking crisis analysed in their sample of the different economies, they found that the financial sector had been liberalised some time during the previous five years. Some intermediate views have also emerged between the two above

[43] Which is subsequently extended by Demirgüç-Kunt and Detragiache (1998), Edwards (2000), Mehrez and Kaufmann (2000) and Rossi (1999).

stated positions. Arestos and Demetriades (1999), Brooks and Oh (1999), Ariff and Khalid **(**2000) preferred the public choice approach and argued that the discipline effect from international capital flows is not sufficiently farsighted. The same inherent short-sightedness of this approach explains the recent crisis episodes in EMEs generally and in Asia particularly (Gab, 2000).

1.2.2. Approaches towards Financial Liberalisation, Sequencing and Order

Two approaches towards financial liberalisation have been proposed in the literature and practically implemented by several EMEs. The first approach suggest a gradual process of liberalisation, it usually starts with deregulation of domestic financial markets and finally (and cautiously) moved to external sector liberalisation. Fundamental premise is that financial markets can only be built up gradually and that they must have achieved enough resilience to meet the risks associated with external opening up. To build up this base requires sometimes decades, it is not matter of months or years. Practically, we have seen that post–World War II Europe has adopted this approach and capital account was not completely liberalised until the end of the 1980s (Wyplosz, 2001).

The second approach aims at a rapid, *ergaomnes*[44] liberalisation of the finance and trade leaving everything wholly on markets mechanisms from a complete state control. The basic premise is that financial repression serves only a selected powerful private and political groups (and interest) which are skilled to thwart any serious reforms for the economy. Consequently the only way out is to just unleash a full scale liberalisation programmes. This approach is often labelled as “Washington consensus", approach and it have been practically experimented in various economies in transition. If we view these two approaches from the macroeconomic stability point of view, both approaches have typically been followed by the

[44] The unilateral liberalisation of capital movements erga omnes.

sever currency crisis which later on turned into banking crisis. EMS crisis of 1992-93 and the South-East Asian crisis of 1997-98 qualify as appropriate examples here. The banking and currency crisis in EMEs during in the 1980s and 1990 were so devastating and costly that that some economists openly questioned whether the capital account needed to be opened at all (Rodrik, 1998). Capital account opening/liberalisation is a very crucial and tricky step as it has the probability of rapidly increasing the speed and magnitude of international spillovers which ultimately result in increased financial vulnerability of individual institutions, national economies and even the regions in an anticipation of any external financial shocks. It has been observed in several EMEs in the 90s (eg. Malaysia).

Empirical studies have established that only those economies have benefited from capital account liberalisation and financial markets integration that has quite developed financial institutions (Chinn and Ito, 2002). Various institutions (IMF) and researchers now endorse that adequate and well-enforced contracts, insolvency procedures, adequate accounting rules and standards, consistent auditing and disclosure practices, efficient risk management capacities of individual financial institutions and an efficient and smooth payment system, comprehensive regulatory framework altogether are the core institutional infrastructure requirements for the success of a liberalised financial system (Eichengreen and Mussa, 1999). The 1997-98 Asian financial crisis serves here a classic example to highlight the vulnerabilities of financial liberalisation polices adopted before the establishing a sound, well-supervised financial system and placing the required regulatory apparatus. This crisis of 97 also underscores the importance of minimizing the risks endemic to the "Open-Economy Trilemma (Chow, 2011, p. 21).

Sequencing and the order of financial liberalisation process is very important issue. Several theoretical and empirical studies has deliberated on this issues that what should be the order of financial liberalisation reforms. Work of Schmukler and Kaminsky (2003) is important reference that established a detailed chronology of financial liberalisation polices in 28 developed and emerging economies since 1973. Their study demonstrates that all the advanced economics now grouped as G7 has liberalized their stock markets first. European economies choose a mix strategy; one fourth of them has deregulated their domestic financial sector first and three fourth of these economies opted to liberalized their stock markets as the first step into liberalisation. However most important policy decision in all advanced economies was to liberalize their domestic financial markets first and then these countries opened up their capital accounts. EMEs of both Latin America and Asia opted different choices, Latin American economies followed the footsteps of advanced economies and liberalized their domestic financial sectors first before capital account opening while the countries of Asia and East Asia employed a mix strategy (see the table 3.2 below). So far, experience of advanced countries shows a much smooth transition to liberalisation as compared to emerging market economies.

Several empirical studies have concluded that inappropriately sequenced financial liberalisation has been a major source to the boom and busts in several EMEs (Williamson and Mahar, 1998). Gourinchas et al. (1999) studied lending boom episodes across ninety-one countries during the period 1960–1996, by linking the boom & busts with financial liberalisation; he concluded that the probability of a financial crisis was significantly higher in the following of a lending boom in an economy. Sundararajan (1999) postulates that orderly liberalisation often requires implementation of some critical and comprehensive reforms across the various sectors of the economy. A complete package of reforms is required for the

financial sector, banking supervision, money markets and central bank's monetary operations. Capital account liberalisation demands some more requisites for its success and most important and foremost condition is that country's financial market must be mature before it chooses to open its capital account. However, it is also argued that, it is impossible for the domestic financial markets to get mature without any exposure to the international financial markets and dealing with capital flows (which are mostly speculative and destabilising). Experiences of various EMEs demonstrate that generally institutional reforms are introduced after opening the domestic financial markets to the global investors and foreign institutions when internationalisation of domestic financial services has taken place already (Schmukler and Kaminsky, 2003).

McKinnon's (1993) book is a quite essential reference on the order of economic liberalisation. It represents the mainstream or orthodox view that financial repression in the EMEs is biggest hurdle in their economic growth and development. He has focused his analysis on the transition economies and argued that first step is to put the house of government in order and central government's budget deficits are required to be balanced and after this transition economies should go for liberalisation and open their domestic markets. And thus according to his gradual approach, last step should be the liberalisation of their foreign exchange markets. Some other very influential views on the sequence of liberalisation are from Edwards (1989) and McKinnon (1993), who have asserted that domestic financial market liberalisation and current account liberalisation should be implemented first and then countries go for the capital account liberalisation. Some of the early literature on the optimal sequencing of economic reform also highlights the importance of capital controls during the process of development. Accordingly, capital account liberalisation should not be undertaken until the end of the process. Immature freeing up capital flows before the fully

implementation of domestic deregulation and trade liberalisation could lead to economic instability (McKinnon, 1973, 1993; Edwards, 1984; Balassa, 1990; Glick and Hutchison, 2000). In addition to these above mentioned steps, restructuring weak and insolvent banks is also recommended before going to fully liberalised the domestic markets to globalised financial markets. Furthermore, auditing, accounting and disclosure practices are also required to strengthen so that institutions can meet the international standards (Johnston and Sundara Rajan, 1999).

Table 3.2 : The Sequence of Financial Liberalisation; Country Examples

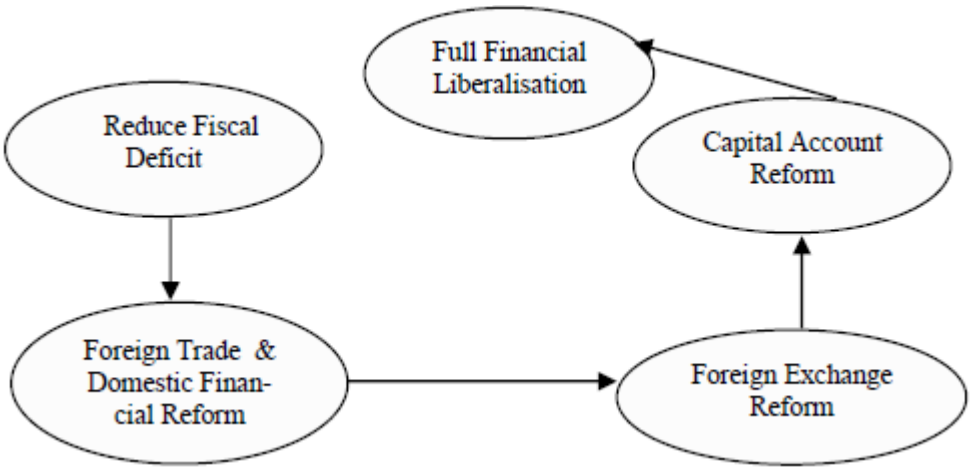
Countries Liberalized Stock Market First	Countries Liberalized Domestic Financial Market First	Countries Liberalized Capital Account First
Canada	Argentina	Finland
Denmark	Brazil	Japan
France	Chile	Mexico
Germany	Colombia	Philippines
Hong Kong	Indonesia	Thailand
Italy	Ireland	Venezuela
Malaysia	Korea	
Portugal	Norway	
Spain	Peru	
United kingdom	Taiwan	
United states	Turkey	

Source; Kaminsky and Schmukler (2003)

Sachs (1989) suggested that liberalisation of foreign markets should take place after liberalisation of domestic financial markets. Thus the proponents of the financial liberalisation posit that a cautious approach in sequencing must be accompanied with adequate bank regulation and supervision. Majority of the economists now recognise after witnessing the several financial crisis episodes from EMEs that financial liberalisation is successful when it is gradual (Kahkonen, 1987; McKinnon, 1989; Villanueva and Mirakhor, 1990). McKinnon (1993) has also attempted to incorporate the institutional capabilities and weaknesses with '*the optimal order of economic liberalisation'*. It is thus argued that: …how fiscal, monetary,

and foreign exchange policies are sequenced is of critical importance. Government cannot, and perhaps should not, undertake all liberalising measures simultaneously. Instead, there is an-'optimal' order of economic liberalisation, which may vary for different liberalising economies depending on their initial conditions (McKinnon, 1993, p. 77). McKinnon (1993) suggested the three prerequisites for successful reform in his study as: the establishment of macro-financial control by lowering government deficits, the correct sequencing of domestic financial market reforms including reductions in trade restrictions and deregulation of external capital flows, and prudential regulations on bank activities to prevent financial market instability from derailing the liberalisation process. A generally accepted and principally suggested order of liberalisation follows the sequence shown in the Figure 3.1 below.

Figure 3.1: Sequence of Financial Liberalisation



Source: Adapted from Hallwood and MacDonald (2000).

Caprio et al. (1994) have argued that success of liberalisation process depends upon the speed by which these financial liberalisation policies are implemented and also endorses that this process must be gradual. Sequencing of financial liberalisation as a gradual process is (Edwards, 1986, 1989a; McKinnon, 1993; Johnson et al., 1997) recommended achieving the macroeconomic stability accompanied with an adequate bank supervision and introduction of

financial reforms. McKinnon, 1988; Cho and Khatkhate, 1989; Calvo, 1988; Rodrik, 1987 and Arestos and Demetriades (1999) suggest to focus on reforms while the financial liberalisation left as last. Claessens and Glaessner (1997) have posits that most of the Asian economies has put strict limits on the entry of the foreign banks as compared to other countries and this according to them has resulted in slower institutional development of the domestic financial sector and thereof financial services provided by these underdeveloped institutions are more expansive . They have also suggest that Asian countries can benefit by accelerating the slow process of opening up and capital account liberalisation and the deregulation of domestic financial markets. According to their analysis of the sample of 8 Asian countries, they have found that the costs of financial services and the fragility of the financial systems are negatively related to the degree of openness of the domestic market to foreign financial firms while the openness (financial liberalisation) is positively related to the efficiency of financial services provision and the institutional development of the financial sector (Claessens and Glaessner, 1997, p. 3).

Johnston, Darbar and Echeverria (1997) have summarised three different views about the sequencing financial liberalisation. First view considers macroeconomic stability, development of domestic financial institutions and financial markets as a pre-condition of capital account liberalisation. Second view sees the capital account liberalisation as catalysts of overall economic reforms. Third view lies between the first two and gave a compromise between two positions; it proposes that capital account liberalisation should be a part of the overall macroeconomic and structural reform programme of an economy and according to this third view costs and benefits varies across the countries. Arestos and Demetriades, 1999; Falvey and Kim (1992) and Caprio et al. (1994) have concluded after studding the six

countries that appropriate sequencing along with favourable initial conditions of financial markets and macroeconomic stability are critical for the success of reforms.

Hallwood and MacDonald (2000) have pointed out five major areas where financial liberalisation measures are required. The five areas are: reduction of the fiscal deficit, liberalisation of domestic system, liberalisation of foreign trade, liberalisation of foreign exchange control, and exchange rate management. Dobson (2003) has elaborated three dimensions of the financial liberalisation process. These include deregulation of domestic financial system (halt the government intervention through, privatization of state-owned banks; freeing interest rates etc.), opening up its markets (e.g. banks can offer insurance services too) and the complete capital account liberalisation. She has not recommended any particular sequence to follow but has emphasized to place necessary pre-conditions when a country relax restrictions on its capital account or go for complete internationalisation. Johnston (1998) has suggested to strengthen the domestic intermediaries before a country go for capital account liberalisation. It is require for domestic financial sector to ensure an efficient use of foreign capital inflows. Furth more he posits that country needs some time to strengthen their domestic financial sector and key financial markets and particularly country's banking sector needs to be strengthening before full opening capital account.

To summarise the above discussion it is concluded that all three dimensions of liberalisation, i.e. the domestic financial sector development, exchange rate flexibility, and capital openness are not required to follow sequentially and country specific conditions must acknowledge. It must be a part of a single holistic approach with a set of interrelated set of macroeconomic policy decisions (Chow, Kriz, Mariano and Tan, 2007). It is suggested that if domestic financial sector is still in developing stage then the best option is to opt for a selective

liberalisation of the capital account and a limited degree of exchange rate flexibility. Higher exchange rate flexibility and an increasingly liberalized capital account seems optimal and best option only when domestic financial sector get developed and deep. Nevertheless, pursuance all three above mentioned options of liberalisation agenda requires that policymakers develop a comprehensive, broader and more internally-consistent set of policies for the better management of this full fledge financial liberalisation plan (Chow, 2011, p. 22).

We have dealt in detail the nexus of financial liberalisation and financial crisis in the EMEs. Some specific sequence and ordering of liberalisation do not guarantee that a country following the financial liberalisation path would not go through financial crisis; rather it can only slow down the immediate contagion of crisis and authorities have some space to manage the instability in case of any event of crisis. Proponents of restrictions point to destabilizing tendencies and speculation. Opponents find restrictions self-defeating and ultimately counter-effective. It is also argued by proponent of financial liberalisation that the authorities should pursue financial reform more aggressively in the good times rather than during the crisis or (World Bank, 1989).

Sequencing and ordering of liberalisation reforms is particularly important element of financial account liberalisation because speculative capital inflows have been source of financial instability in EMEs since these economies have opened up. This situation warrants that certain institutional arrangements like supervisory and regulatory capacity, appropriate legal standards must put in place to maintain stability before a country decide to go for capital account liberalisation. This will surely help the authorities to maintain financial stability in the presence of capital inflows (McKinnon 1993; Kawai and Takagi 2008). Additional regulatory

measures should be employed according to targeted objectives, e.g. in the recent GFC of 2007 several EMEs imposed capital controls (Malaysia).

To sum up our analysis, it can be argued that despite following a proper sequencing and placing best regulatory apparatus, there is no guarantee that financial instability and crisis problems would not reoccur. As we have discussed in the 2nd chapter, the actual problem is in the flawed economic paradigm (the neoliberal growth model) rooted in the mainstream macroeconomic theory and the financial liberalisation of finance and economy is one aspect of this paradigm. Until this flawed neoliberal growth model is not replaced with some sensible model, the problems of this paradigm would continue to haunt emerging economies particularly. But in the foreseeable future, there seems no change in this paradigm so to a gradual and properly sequenced financial liberalisation programme can minimise the destabilisation tendencies. The table 3.2 shown in the previous pages established that the advanced economies opted for the gradual liberalisation and during the late 70s and 80s most of the advanced economies enjoyed a stable economic years. On the contrary, hasty financial liberalisation, abrupt liberalisation of capital accounts, domestic banking system and exchange rates have intensified the already fragile state in emerging economies and exposed these countries exposed to various bouts on instability and crisis during the 90s. We have shown in next sections (2 and 3) of the chapter that an inadequate regulatory and supervisory framework greatly increased the destabilisation in a fully liberalised economy. Thus it seems mandatory that before liberalisation the financial sector, EMEs must palace effective regulatory and supervisory structures to minimise the impact of contagion to any external shock or even internal eruption of crisis.

1.3. Transmission of the GFC to EMEs

Although initially seems decoupled, majority of the EMES have affected by the global financial crisis through trade and finance linkages. However, EMEs exhibits a considerable variation across countries (Kose and Prasad, 2010; IMF, 2010). The effects on financial markets were characterised by a collapse in asset prices and private credit growth, an increase in risk premia, and exchange rate depreciation eventually resulting in capital flows reversal and global deleveraging. Berkmen *et al.* (2009) has examined the role of financial factors and they claim that the countries with a more leveraged domestic financial system and faster credit growth suffered a larger output loss during the 2007 crisis. Similarly, Blanchard et *al.* (2010b) have pointed out the role of a massive short-term external debt in output loss during the financial crisis of 2007. Kose and Prasad (2010) contend that large buffer of foreign exchange reserves, greater trade linkages within EMEs and export diversification played a due role in the increased resilience among EMEs. According to an IMF study, there were four channels at work in the transmission of the 2007 GFC to other countries. These include, EMEs exposure to the assets backed securities, and increased risk aversion of global markets, EMEs increased integration and reliance on advanced economies financial systems and collapse in demand from the advanced economies that led to decline in the exports of EMEs (IMF, 2010, pp. 5-6). Wong (2012) has argued that there are two main channels through which the financial crisis was transmitted to the EMEs; these are the financial channel and the trade channel. These two important channels are discussed in the following.

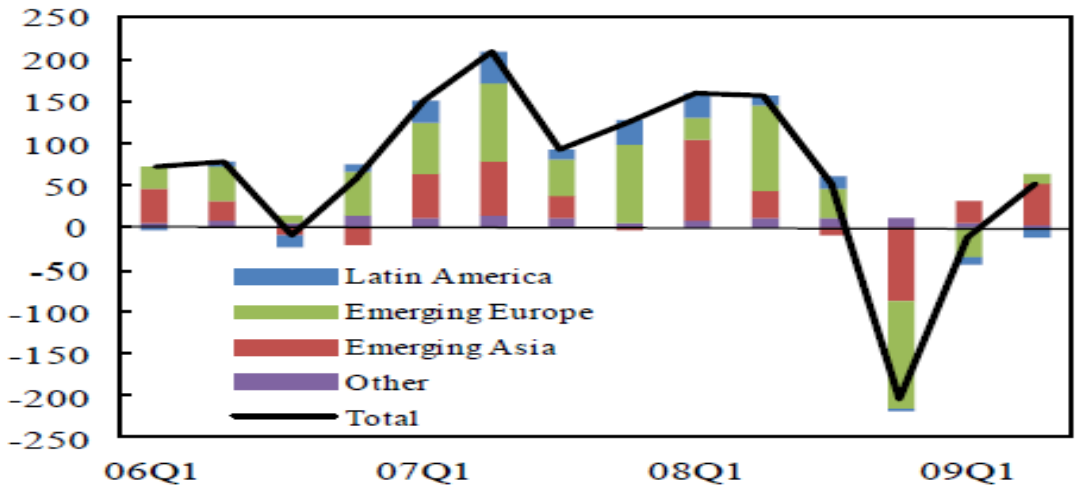
1.3.1. The Financial Channel

The standard narrative of the transmission of the global financial crisis emphasizes the role played by international financial linkages. The original shock in the US financial system led to disruption in the financial systems of several advanced countries and emerging economies around the world (IMF, 2010, p. 4). Financial channel worked through the interlinkages

among the financial intermediaries in different countries, through the direct involvement of the financial intermediaries in the US housing markets and through the indirect investment of other economies in the US financial markets (Wong, 2012).

Private capital flows to EMEs fell steeply in the first round; total net private capital flows, which reached a record high of US$1.2 trillion in 2007, fell to only US$649 billion in 2008 and to US$435 billion in 2009 (IIF, 2009). This downfall affected the almost all EMEs (although with some variation). Nonetheless, these flows resumed in the third quarter of the 2009. Although Portfolio equity inflows rebounded more quickly yet total private capital inflows reached only US$722 billion in 2010 (half to the actual number in 2007). It is important to mention that from 2002 to 2007, net capital flows to EMEs grew nearly fivefold to US$1.2 trillion, a level higher than that prior to the East Asian and Russian crises. But these flows began to fall in 2007 and eventually turn into net outflows and with further deterioration in international financial markets US$92 billion outflowed from EMEs in 2008 (Suchanek and Vasishtha, 2010) (See the figure 3.2 below).

Figure 3.2: The Collapse of Capital Flows



Source: IMF, Balance of Payments database

Holding of toxic assets was not a big source of vulnerability due to less exposure of these products in several EMEs. The assets and liability mismatch had differentiated effect on

EMEs but the recoupling effect of the financial markets affected the apparent stability of EMEs financial markets. Furthermore risk aversion of major conglomerates operating worldwide had local effects on EMEs too (Prasad, 2011, chap. 12). As mentioned above, financial institutions in most of the EMEs had not exposed to toxic financial products (derivatives, CDOs, OTC etc.), therefore balance sheets generally remained cleaned generally. Some EMEs used derivatives products to hedge against currency and other risks associated with trade sector of the economy.

Besides the sparing usage of speculative and risky products, EMEs have improved their regulatory and supervisory framework and introduced various reforms (discussed in next sections) over the years keeping in mind their own volatile financial history. EMEs also perused strong monetary policy frameworks and their improved economic growth numbers helped EMEs to show resilience. Keeping in view the devastation of the Asian Currency Crisis, Many EMEs (China, Russia, India, Korea, and Brazil) have accumulated huge reserves of foreign exchange as a cushion to any "sudden stops". Better composition of capital inflows also played its role because now FDI flows to EMEs are larger than portfolio investment flows (Suchanek and Vasishtha, 2010). Furthermore, at the time of GFC of 2007, majority of the EMEs were following the traditional models of banking (Boorman *et al*., 2010, p. 5) which helped these countries to insulate from the spillover of subprime collapse. However EMEs have had its weakest link also; the capital inflows and these economies could not immune to the sudden stops or reversals of capital inflows due to global deleveraging and international liquidity freeze. As a result credit flows through international banks and global bond markets to EMEs dried up in the first around effects. Major financial institutions of advanced economies withdraw funds from their EMEs subsidies to rebuild their capital base at home and this pressurized the domestic banking and financial institutions of the EMEs.

Another very important channel was the seizing-up of the international credit markets and hence supply line of credit flows through the international banks and global bond markets to EMEs dried up (IMF, 2010 ; Wong, 2012).

As an overall assessment, it can be argued that EMEs withstood the recent financial crisis of 2007 better than in previous crises. Beside good luck, the improved macroeconomic policies (inflation targeting), increased flexibility of exchange rates, better composition of domestic debt, improved fiscal position and accumulation of huge foreign exchange reserves led to conclude that there is some justification in the perception that EMEs have improved their macroeconomic fundamentals and regulatory structures during the last decade. Although there is variation in country specific resilience and we have discussed this issue in detail in the section 2 and 3 of this chapter.

1.3.2. The Commodity and Real Activity Channel

During the second round effects of the 2007 GFC almost all the EMEs got the impact of slowdown. The trade channel generally works through the movements of goods and services across the globe (Wong, 2012). Due to decline in consumption and fall in incomes in the advanced economies, demand for EMEs exports collapsed. Although the speed and severity of the export collapse was almost unprecedented but final impact of this declined exports demand varied considerably across the countries. Some heavy export dependent economies suffered severely e.g. Mexico (80% of its exports are destined to United States). Some big exporter of manufactured goods faced a severe shock. This was followed by a decline in the exports of commodities and intermediate goods and raw materials supplied to advanced economies enterprises declined. Due to recession in advanced economies and fall in the economic activity, EMEs workers remittances also declined. Again example of Mexico is suitable to establish the point; remittances from the US to Mexico have experienced an

exceptional drop compared to other EMEs. Thus combined effects of both channels of contagion through the he freeze of international capital flows and the collapse in exports, decline in remittances led to significant currency depreciations and losses in international reserves in several EMEs (Boorman, 2009) (See Annexure 6: Decline in important economic variables after the 2007 GFC).

In the following section, we have presented a comparative analysis of varied effects of the GFC of 2007 and evaluate critically the policy response from EMEs. Important country studies in this section of the study give a better understanding of the ways in which initial conditions, combined with the specific structure of the financial sector, the specific nature of the capital flows, and the specific policy actions shaped the final effects of the crisis in each country (IMF, 2010, p. 3). Besides their emerging economy status, the common policy adopted by all these referred economies debated here is the program of financial liberalisation which involves a relaxation of interest rate and capital controls. These police may in principle lead to a more efficient allocation of credit with banks ensuring higher returns on their loans (Fry, 1995). But as discussed in detail in the first section, financial liberalisation can induce riskier banking behaviour and offers an environment in which a financial crisis becomes a norm[45]. Most of the EMEs pursued financial opening during the last two decades. And now many of their financial systems are more integrated into the global financial system than most advanced economies in terms of the relative amount of foreign capital transactions to their economic size. This increased interconnectedness has made their economies more vulnerable to contamination and spillovers of crisis originating elsewhere (Amess and Demetriades, 2010, p. 218).

[45]Financial liberalisation, however, also offers fertile ground for banks to indulge in moral hazard behaviour (Caprio, 1992; McKinnon and Pill, 1997; Corsetti, Persenti and Roubini, 1999; Huang and Xu, 1999; Hellmann, Murdock and Stiglitz, 2000). Government provided safety nets in a liberalized financial market may also induce moral hazard behaviour. Such safety nets can lead to overinvestment in unprofitable projects and may persist because the government's promise of a bailout allows banks to gain access to foreign borrowing (Corsettiet al, 1999).

Section 2: Case Studies of Resilient Group EMEs

Resilient group EMEs consist of those countries that sustained well the 2007 financial meltdown. These are Malaysia, Brazil, Thailand, Chile, India, Vietnam and Poland. Most of these EMEs have experienced unprecedented economic growth due to better macroeconomic policies, fiscal responsibility and political stability between 2003 and 2007. Resilient group EMEs have significantly improved their macroeconomic fundamentals and undergone structural and financial reforms since the previous episodes of the crisis. These developments resulted in enhanced composition of capital flows, improvement in debt structure and greater access to international debt markets. This section highlights that lessons learned from their own history of financial crisis have prompted these EMEs to improve their macroeconomic fundamentals and to implement structural reforms (Suchanek and Vasishtha, 2010). Some have allowed a more flexible exchange rate, while others have accumulated substantial foreign exchange reserves and many avoided running large current account deficits. Measures to diversify their financial systems, efforts to develop effective regulatory, supervisory and surveillance frameworks, strengthening of governance and risk management practices, as well as development of a robust financial infrastructure and safety nets have supported a resilient banking system that is well positioned these EMEs. All this have been further complemented by a higher level of regional cooperation and collaboration in responding to crisis. A case by case analysis is followed by a synthesis of the policies these EMEs have opted keeping in view their peculiar history of different crisis.

2.1. THAILAND

Thailand has lived up with two financial crises in the last 20 years. These are the Asian currency crisis of 1997-98 and the global financial crisis of 2007. Both of these financial crisis represents indeed quite different experiences and exhibits differences in dynamics, origin of the crisis and its depth and severity (Chirathivat and Mallikamas, 2010) and the way

Thailand handle these crisis. The 1997 Asian currency crisis were home-grown and have its origin in country's own financial sector. A prolonged and spectacular economic boom since the second half of the 1980s led to easy loans from abroad in the early 1990s. This unprecedented credit inflow with the belief of limited risks at the margin was the driving factor of the crisis. The 1997 crisis was an economically very costly and damaging event and Thailand took 5 years for Thailand to recover and to resume 5% of GDP growth in 2002. Nevertheless overall stable global economic conditions since 2002 significantly contributed to Thailand's resilience against the GFC of 2007 (Chirathivat, 2007). Thailand experience with the GFC of 2007 is evaluated in the following.

2.1.1. Impact of the 2007 GFC on Thailand

The immediate impact of the 2007 GFC on the Thai economy was limited. Its financial sector remained stable due to the funding structure of Thai banks and the low exposure of the Thai banking sector to subprime assets. Domestic deposits based structure of the Thai banks helped the country to insulate from the tight international liquidity conditions. Thus Thailand's very low reliance on foreign sources of funding as well as its low exposure to foreign assets helped it shield from the crisis. Foreign banks presence in Thailand account only 10% of the total assets of the banking system and account only 3.5% of the total liabilities of the banking system. Stable domestic deposits form the core of the Thai banking system's funding source and accounts for 77% of total liabilities. Furthermore, 95% of bank loans to households, corporations, and the government sector were *Baht* denominated, further mitigating the risks of currency mismatches (BOT, 2010). Nevertheless, trade channel affected the Thai economy[46]. Second-round effects from the decline in economic activity in the advanced

[46] A sharp drop in exports began in November 2008 that has directly affected its GDP growth rate to 2.5 percenet and a negative growth rate of 7.1 percent in November 2009. Thailand's majority exports are destined to the USA, Japan and the EU and due to recessionary conditions, Thai exports suffered great losses. Thailand's input and raw materials' exports to China also got a hard hit as well as Thailand's trade of crude oil with the Middle East

economies and global deleveraging were slightly more pronounced. This situation required a policy response both at the macroeconomic and financial sector levels. The key challenge for Thailand has been to help small and medium enterprises to adjust to the impact of the global slowdown while maintaining confidence and ensuring a normally functioning financial sector.

2.1.2. Thailand's Experience with Asian Currency Crisis of 1997

Thailand is distinguished among Asian EMEs of being the first to face the 1997 crisis. The resulting economic and financial collapse identifies the shaky nature of Southeast Asia's capitalist boom. Country was highly praised by the international financial intuitions (the World Bank and IMF) as being the most outward looking, hub to foreign investment and having a market friendly policies (Julian, 2000). The crisis that started in July 1997 was unprecedented in Thai history and brought to an end more than forty years of uninterrupted growth. It's real GDP contracted by 10.4 % in 1998 which had previously contributed to an impressive improvement of the country's socio-economic indicators. The crisis also engulfed the neighbouring countries and threw regional financial markets and economies into turmoil. Since the early 1990s, due to its good macroeconomic conditions and accommodative polices, Thailand attracted huge inflows of funds. Due to stagflation of Japanese economy and the recessionary growth in European in the same period, international investors found Thailand an attractive destination of their money. Thai government and authorities introduced various measures in its capital markets and strict banking regulations were phased out in the beginning of 1990s. This accommodative policy about the financial markets regulation and capital account liberalisation encouraged credit expansion in the domestic market. Massive but speculative money inflows from abroad find Thai financial markets a profitable destination. Exchange rate stability was another remarkable feature of the Thai economy prior to the crisis. It was an era of fixed exchange rate; fixed to a basket of world dominant

currencies, particularly US dollars. Consequently, Thais economy went through a long period of nominal exchange rate stability as the baht had fluctuated very narrowly between 24.91-25.59 baht per dollar. With this background, Thai economy caught up in crisis (its real GDP shrink by 10,4 % in 1998) which latter on due to its depth, severity and contagion is referred as the Asian currency crisis of 1997.

Analysis of the main causes behind the Asian Financial Crisis of 1997-98 is pertinent here. An indeed crisis was a homegrown in nature. Weak fundamentals and the shaky financial sector of the Thailand can be labeled broadly as the two main factors causing the crisis. Between the periods 1988-1995, Thai economic economy was going through a boom but with chronic current account deficit, weak financial systems and overvalued domestic currency. Thailand had had persistent current account deficit ranging from -5.08 to -8.10 % of GDP. Due these weak macroeconomic fundamentals foreign speculators attack the Thai baht. Thailand spent its 90% of foreign reserves to defend the baht against speculative attack but failed to do and a speculative credit boom led the country into sever crisis.

2.1.3. Financial and Economic Reforms in Thailand after the 1997 Crisis

Thailand initiated a programme of economic and financial reforms after the normalization of 1997 currency crisis. Country implemented a comprehensive set of reform programme which focused on macro-economic stabilization and structural reforms in the corporate and financial sectors. Since then, Thailand has seen a rapid economic recovery. As a result of these reforms, real GDP was restored to its pre-crisis (1997 crisis) level in 2002 and continued to grow by 6.4% per annum on average in the following two years supported by domestic consumption, strong manufacturing growth, favourable export performance, and low interest rates. Let's have a brief look at the various measures that Thai authorities took to stabilize its economy in

the post 1997 era. Discussion of the Financial Sector Master Plan (FSMP) is based on the findings of the Central Bank of Thailand's *Financial Sector Master Plan Handbook* (24th August, 2009) and Federal Reserve Bank of San Francisco's (2010) analytical note.

Thailand introduced the Financial Sector Master Plan (FSMP) in 2004 to overhaul its banking and financial markets. It is a long term comprehensive plan aimed at creating a more efficient, transparent, and internationally competitive financial sector suiting the requirements (internal & external) of an emerging market like Thailand. The FSMP aimed to improve financial infrastructure notably in the following three directions: first, to support commercial banks in addressing the issues/credit needs of low income households. Secondly, to upgrade the Bank for Agriculture and Agricultural Co-Operatives (BAAC) into a fully-fledged rural development bank and. Third, FSMP aimed to support community financial organization, i.e. micro-finance institutions. The Plan was conceived and sketched in 2002-03 and Thai authorities decided to implement it gradually in two phases. First phase of the FSMP completed in 2009 right in the midst of the contagion of the 2007 GFC. Second phase of the reforms started in 2010 (FRBS San Francisco, 2010). Thai authorities' motivation to promote the development of domestic capital markets was rested on the arguments that the development of capital markets yields advantages in addition to that of banks (Levine and Zervos, 1998) and diversified financial system is able to withstand shocks. Nonetheless, Thailand's financial system has become more diversified than ever during its recent history and that's one of the reasons that it has remained resilient to the 2007 GFC.

I-Government's Dual-Track Policy

Since 2001, Thailand has pursued a so-called "dual-track policy" aiming to strengthening the domestic macroeconomic fundamentals and enhancing Thailand's integration with world

markets through international trade and investment. At the peak of the currency crisis (1997) the Thai banking sector was hit hard. It incurred large net losses, declining net interest margin, low capital levels and a non-performing loan ratio reached at 43% of total loans in 1998. However in the post crisis (1997) era, Thai authorities seriously faced this challenge and skillfully resolved the banking problems with complete support and political will of the government. The government embarked on a comprehensive restructuring of the financial sector, intervening in weak banks and focusing on recapitalization, debt restructuring, reform of the regulatory and supervisory framework, strengthening corporate governance of banks, and introducing initiatives to deepen and broaden the capital market. Financial sector consolidation was pursued and the Thai authorities aggressively preceded the implementation of regulatory and supervisory measures. In compliance to Basel II accord and the phased implementation of International Accounting Standards (IAS), Thailand's financial regulation and supervision was moved towards a risk-based framework. Another key element of the reforms was Thai authorities focus on risk-based supervision under Basel II accord.

II-Development of the Financial Sector Master Plan (FSMP)

Bank reforms were aimed to deal with the inherent weaknesses in the financial system. As an immediate and first step, financial sector consolidation was focused and the Thai central bank (BOT) closed more than 50 insolvent financial institutions, recapitalised viable institutions, and established a debt restructuring mechanism. Consolidation in the financial system led to reduce the number of deposit-taking institutions down to 45 from 124 before the 1997-98 crisis (BOT, 2010). By 2000, Thai authorities focused on a longer term, comprehensive reform program. In this aim, in early 2002, the BOT formed a committee to formulate and finalize a master plan for reforms. This plan was implemented in two phases. During this phase (2004-2009) financial institutions were restructured and consolidated under a '*One*

Presence' policy. Another important step was the overhaul of the commercial bank licensing system for domestic and foreign banks. Keeping in mind the experience of the 1997 crisis, BOT restricted the operations of foreign banks and strictly limited the number of new domestic and foreign market entrants. Under the Financial Institutions Business Act (FIBA) of 2008, a new licensing system is enacted which has more than a dozen existing laws governing financial institutions. Central bank of Thailand was given more autonomy to pursue these various policy reforms. The second set of measures under Phase I of the FSMP focused on broadening access to financial services among under banked households and small enterprises and extended the micro finance programs. This phase of plan also enhanced the financial system's efficiency through greater competition and operating cost reductions. Plan also aimed to improve the risk-management capacities of financial institutions by the development of better and more complex financial markets and infrastructure (Nijathaworn, 2012). The BOT seriously addressed the issues of NPLs and removed the legal berries to solve the problem (Economist Intelligence Unit, Thailand Country Finance Report, 2010. April 10, 2010). BOT has implemented several measures to enhance the transparency and improvement in the financial governance (Yao and Carroll, 2010).

III- Introduction of Basel III Standards

Thailand is among the pioneers to introduce Basel III standards and have already implemented the capital adequacy requirements. High capital levels and strong levels of profitability of Thai banks made this possible because Thai banks are required to maintain a minimum capital ratio of 8.5%, but they generally hold much higher amounts with the average Basel II ratio standing at 15.2% – 90% of which is common equity. Thus with robust capital position, Thai banking industry's longer-term strength will benefit from a continued improvement in capital, liquidity, governance and risk management. Overall, the above stated

reforms introduced by Thai authorities in the aftermath of 1997 crisis have brought Thailand's financial system into much better shape. It is not surprising that the country performed well during the 2007 GFC. As a conclusion, a standard lesson to be learnt is that regulation should precede the liberalisation of markets and banking sector (Villanueva and Mirakhor, 1990; Obadan, 2006).

2.2. CHILE

It is said that Chile was the only economy that was prepared to face any financial crisis in 2007. Its financial sector remained robust and sound banking indicators reflects the authority's vigilant approach to deal with any crisis. Chile has a market-oriented economy characterized by a high level of foreign trade and a reputation for strong financial institutions and sound macroeconomic policies. Its financial sector is one of the deepest in the region and is highly integrated in the global financial system (IMF Country Report, 2011). Chile is also an export dependent economy and its commodity exports are predominated by copper (copper exports equal to 22% of GDP in 2007).

2.2.1. Impact of the GFC of 2007 on Chile

Chile faced the GFC with strong macroeconomic fundamentals. From 2005 to 2007, growth was steady, averaging 4.5% and this impressive GDP growth was supported by a double increase of copper prices in international commodity market between 2005 and 2007 (IMF, 2010, p. 29). This impressive exports performance resulted in the large trade and current account surpluses. Inflation rate was well maintained in pre-crisis period. The main effect of the 2007 financial crisis was through the trade channel. The crisis was associated with a decrease in exports, but more importantly, with a sharp decline in the price of copper (IMF; 2010). The Chilean GDP declined to 0.4% in 2009 from 5% prior to 2007 GFC, but due to

its strong fundamental it has bounced back strongly and according to *the Economist* forecast it will grow more than 4% in the coming years (the *Economist* forecasting panel, 2011).

Table 3.3: Chile (Current Account, Capital Flows & Reserves) *(US $ Billion)*						
	2005-07	**2008Q1**	**2008Q2**	**2008Q3**	**2008Q4**	**2009Q1**
Exports (goods & services)	67.9	23.5	22.7	20.7	16.4	15.1
Imports (goods & services)	-65.4	-22.6	-23.9	-24.3	-19.0	-14.5
Current account (incl. transfers)	5.3	1.5	0.1	-2.9	-2.1	0.9
Net bank flows	0.2	1.6	1.2	0.1	-1.1	-2.1
Net non-bank flows	-4.1	-1.1	1.0	7.5	2.8	2.9
Financial Account	-3.9	0.5	2.2	7.6	1.7	0.8
Change in Reserves	1.2	0.4	2.4	4.6	-0.9	0.5
Source; IMF:2010						

On the financial side, net capital flows were positive in both 2008 and 2009. Table 3.3 above depicts the evolution of the current account, the financial account, and foreign exchange reserves. Although current account balances registered a sharp decline, but foreign exchange reserves showed a moderate decline mainly due to depreciation (IMF, 2011). Nonetheless, the pattern of gross capital flows played an important role here to maintain the reserves position which was higher during this period in contrast to some other EMEs. Still, the trade shocks and the financial crisis collectively had some effect on the real economy and the stock market tumbled by 15% September to December. But it was a small decrease relative to other emerging market country stock markets.Chilean financial system remained robust and resilient to the significant shocks experienced since September 2008. It is witness by the sound indicators of its financial sector during the crisis period. Its banks are well capitalized, liquid, and highly profitable. Bank capital is high and of high quality (common equity accounts for 44 percent of regulatory capital); and leverage is constrained by regulation (see the Table 3.4 below).

Table 3.4: Chile -Financial Soundness Indicators (in percent)						
	Dec-05	**Dec-06**	**Dec-07**	**Dec-08**	**Dec-09**	**Dec-10**
Capital Adequacy						
Tier 1 to RWA	10	9.3	9.4	9.6	10.9	10.1
Leverage ratio	6.9	6.6	6.7	6.9	7.4	7.1
FX loans to total loans	12.3	13.4	12.8	13.9	9.9	10.1
Asset Quality						
NPL to gross total loans	0.9	0.7	0.8	1	3	2.7
Provisions to NPLs	1.8	2	2.1	1.8	0.8	0.9
Write-offs to total loans	0.9	0.7	0.9	1.1	1.5	1.2
Earnings and Profitability						
ROA	1.3	1.3	1.1	1	1.2	1.5
ROE	17.9	18.6	15.7	13.2	15.2	18.5
Liquidity						
Liquid assets to total assets	19.8	16.8	15.5	17.5	21.3	20.5
FX denominated liab to total liab	19.6	18.4	18.7	21.7	20.7	22.2
Source: Central Bank of Chile						

The preparedness of the Chilean government and the central bank resulted in overall strong balance sheets and profitability, a robust regulatory framework, and timely action by the monetary authorities to counter pressures on liquidity and the supply of credit during the peak period of the financial crisis. Although, being an open economy, Chilean banking sector is vulnerable to aggregate financial shocks, but it's less reliance on external financing sources, reduces exposures to international financial institutions and limited risk in the system (market risk in the system is limited mostly in government securities, accounted for 4 to 5.5 percent of assets, and securities available for sale for 7 to 8 percent of assets) and lower exposure to OTC products (Chile represents only 3% of securitization activity in Latin America as compared to Mexico's 40% and Brazil's 32%) have made it resilient to institution specific shocks. Besides these facts, Chilean authorities took several measures to minimize domestic disruptions and preserve stable conditions in the domestic financial system. These measures included the flexible reserve requirements, swap lines with institutes complemented by the

government auctions of foreign currency denominated deposits for domestic banks. Furthermore, on the recommendations of the Advisory Committee on Sovereign Wealth Funds (SWF), domestic banks were declared eligible institutions for SWF deposits in the situation heightened risks in foreign financial institutions (Chan-Lau, 2010, p.3).This better performance of the financial sector reflects that Chilean authorities have learned valuable lessons from the past episodes of the crisis and this time they were well prepared.

2.2.2. 1981-84 Banking Crisis in Chile

Chile has had experienced two financial crisis between 1973 and 198 under two extreme regulatory systems. We will discuss the 1981-84 banking crisis here and compare and contrast country's policy response with the 2007 GFC. General Augusto Pinochet took the charge of the country in 1973 and he immediately re-privatized the Chilean banking system. Banking sector was liberalised and regulatory controls were lifted. Banking sector's reprivatisation was followed by a gradual relaxation of entry restrictions and in early 1978, foreign banks started to open subsidiaries in the Chile and there were 19 subsidiaries of foreign banks operating in Chile by the end of 1981. Better macroeconomic conditions and loose credit growth set the seeds of the economic "euphoria of 1980-81". Consequently, asset prices sky rocketed and borrowings increased extensively (clear reminiscent of a bubble). The stock of bank credit to businesses and households nearly doubled to 45% of GDP (Barandiarán and Hernández, 1999, p. 38) from 1979 to 1981. This trend came to a sudden halt with the 1981-82 global recessions. These developments put the Chilean financial sector into a compromising position and due to weak bank regulations, the financial sector piled up huge amount of debt without adequate capitalization. Although banks were privatised but they were not following the international standards and market rules and thus their risk management practices about the debt instruments was almost non-existent. Majority of the loans were commercial but banks were carrying a substantial portion of consumer and mortgage debt.

Most of the bank debt was short term in nature and due to lack of access to long term funding; it was not possible to reschedule it. As a result banks rolled it over and raised the interest's rates. These developments are also referred as an unsustainable "Ponzi" scheme and played a critical role in bringing down many banks as their balance sheets rapidly deteriorated. Due loans accumulated in the past years went up from 1.1% to 8.4% of total loans outstanding between the periods 1980 to 1983. When the financial stress increased among the households and firms, asset prices plummeted in an anticipation of uncertainty and the solvency of the banks became doubtful. Two factors were behind this situation, firstly it was borrower's inability to repay the loans and secondly both the households and markets were expecting some kind of government intervention in the financial system. The sense of a likely crisis further deepened in the markets because many of the financial institutions were subsidiaries of the conglomerates that controlled the large pension funds. These pension funds made heavy investments in bank time deposits and bank mortgage bonds. In this complex and uncertain situation, the first national banks and its subsidiaries failed in the November and regulatory authorities took the charge of its management (Barandiarán and Hernández, 1999, p. 20). Central bank of Chile took the charge with the support of the government and announced three policy decisions aimed to maintain liquidity in the financial system, assisting the borrowers, and strengthen the lender balance sheets; these three measures were: 1) debt restructuring for commercial and household borrowers; 2) purchases of nonperforming loans from financial institutions; and 3) the expeditious sale, merger, or liquidation of distressed institutions (Barandiarán and Hernández, 199, pp. 21-23). The most important lesson from Chilean experience is its central banks relentless efforts to restore faith in the credit markets by maintaining liquidity and bank capital structures through various measures. Central bank extended the maturity of household and consumer loans, it made temporary purchase of

substandard loans from problem banks and promptly liquidated the insolvent financial institutions.

2.2.3. Financial Reforms and Market Liberalisation Polices of Chile

Chile was the first Latin American economy to implement rigorously the free market oriented reforms under the Pinochet regime (1973-90). Pinochet government not only privatized Chile's major financial firms and banks but its social security system was also privatized in 1982. Under the Chile's short-lived "socialist experiment," between the 1970 -1973, under its economic ideology state nationalized the whole banking system which imploded in 1973 due to poor policy choices of the social government and consequently severe macroeconomic imbalances erupted in the economy. Financial sector also suffered heavy losses and lost its competitiveness due to a heavy state control and was unable to absorb any financial shock (Hornbeck, 2009). Indeed country faced the severe banking crisis during this period but its central bank and government took steps to recover the confidence of the markets. Following the 1973 crisis, Chile undertook a wholesale change in economic management, including financial reform that transformed a model based on state control to one relying on market discipline combined with light regulation. Financial sector supervision was consolidated in the Superintendencey of Banks and Financial Institutions (Velasco, 1991) and Banks were privatized and strict government regulations were loosened (e.g., reserve requirements lowered, interest rate ceilings removed, limitations on foreign banking softened). Prudential supervision of the banks and financial institutions was also eased (Hornbeck, 2009).

The macroeconomic framework that has been built since the mid -1980s and consolidated in the late 1990s keeping in view different episodes of crisis has proved increasingly effective at managing external shocks and providing macroeconomic stability. The main elements of this framework are two. First, the implementation of a responsible and predictable fiscal policy

which guarantees public sector solvency. Second, the conduct of monetary policy by an independent central bank aiming an inflation targeting regime supported by a floating exchange rate; thirdly increased trade openness which allowed for the diversification of import and export markets; and lastly a solid financial system, with competitive and well-capitalized banks, appropriately regulated and well supervised by the authorities (De Gregorio, 2008).

2.2.4-Regulatory and Supervisory Measures for the Financial Sector

Following the two financial crises, Chile redesigned its regulatory system in 1986 and success of its financial system rests on a 1986 overhaul of the General Banking Act. Basically, these reforms had two fundamental principles; first simplify the regulatory framework and second streamline prudential supervision. Since then, it has had one of the most stable financial systems in Latin America and has overcome regional and global financial crisis when other countries in the hemisphere did not. Sound financial and banking sector was considered a priority following Chile's 1982 economic and banking collapse and a new General Banking Act was enacted in 1986. In so doing, new-found soundness of the banking system has not compromised bank profitability, reflecting modernization and efficiency gains that paralleled development of effective prudential regulation and oversight. Although over time several changes have been implemented, some basic features remain which ensure the development of a dynamic and sound banking system in the context of adequate prudential regulation.

Although Chilean government and authorities were very keen and ambitious to deepened its financial markets but they preferred a more cautious approach keeping in mind past experiences e.g. mortgage origination in Chile is adequately regulated. Banks are allowed to hold positions only on specified derivative contracts and credit derivatives are not allowed.

During the 2007 GFC, Chile had only 3% of securitization activity in Latin America as compared to Mexico's 40% and Brazil's 32%. Off-balance sheet exposure of the financial institutions is also moderate and loans constitute 70% of assets (Hornbeck, 2009). Financial institutions are required to have a thorough process of authorization by the Superintendence of Banks and Financial Institutions to enter into foreign exchange market or to make any deal in derivative contracts (Gregorio, 2008).

Chile has pursued sound economic policies for nearly three decades. The government's role in the economy is mostly limited to the regulation and guidance. Specific policy responses and lessons from Chile bear out that lessons must be learned keeping in view own financial history and macroeconomy and avoiding the mistakes from being repeated. Chile adopted an integrated approach to regulation by creating a strong, independent, and consolidated regulatory and oversight agency in the SBIF which is an independent agency and it has broad and definitive powers over a financial system. This highly centralized regulatory system has improved accountability in the financial industry which play key role in Chile's resilience to the 2007 GFC (Hornbeck, 2009). IMF has declared that Chile's financial regulatory and supervisory system is robust, but there are areas which demand constant attention e.g. strengthening the independence and legal protection of regulatory authorities, the oversight of financial conglomerates and the framework for the resolution of failed financial institutions. The authorities are rightly focusing on improving the regulatory architecture while taking on board a macro prudential approach (IMF Country Report, 2011).

To sum up the discussion about Chile, it can be argued that due to better regulator policy, improved the accountability, by restricting the risky behavior of financial institutions, and promoting a more traditional banking model, the country has successfully shielded off its

financial sector from the contagion of the 2007 GFC. Nonetheless, this better performance of Chile does not guarantee the possibility to having a foolproof regulatory regime and Chile will always be able to cope with any crisis with its regulatory policy. The country has showcased the merits of a balanced and comprehensive model of financial regulation and oversight. This development surely established a positive exception in the group of emerging economies with a long history of financial crisis during the last three decades.

Both economies in the group of resilient EMEs i.e. the Thailand and Chile demonstrates that these have learned the precious lessons from the past crisis experiences and focused on reforming its financial sector particularly. Both of these economies have consolidated[47] their financial system over the years for the better implementation of regulation and introduced comprehensive regulatory reforms that limited the financial institutions exposure to the risky OTC products. Supervisory authorities and governments of Thailand and Chile were prepared to deals with the crisis. A risk-based regulatory framework of Thailand and enhanced macroprudential regulation in Chile with traditional banking model (very low exposure to securities and derivatives) go a long way to protect these economies from the onslaught of the GFC of 2007.

Section 3: Case Studies of Non-Resilient Group EMEs

These are some EMEs who could not sustain the 2007 meltdown these include Mexico, Turkey, Pakistan South Korea, Russia and Philippine and South Africa. The GFC of 2007

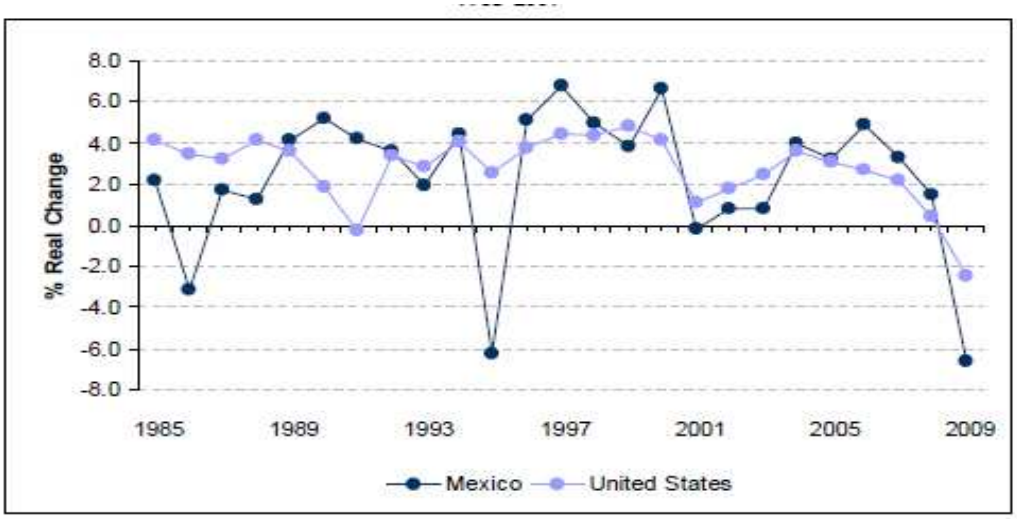
[47]The Chilean financial system exhibits high degree of conglomeration. Majority of financial institutions are owned by conglomerates operating in two or more financial sectors. Some figures will help to understand, e.g. in term of assets, the 10 largest conglomerates account for 77 percent of assets in the banking industry, 65 percent in insurance, 85 percent in investment and mutual funds, 91 percent in brokers, and 42 percent in pension funds. In the same vein, Thailand consolidated its financial sector after the Asian currency crisis to rationalize and consolidate the financial system under a 'One Presence' policy under Financial Sector Master Plan. Consolidation in the financial system brought the number of deposit-taking institutions down to 45 from 124 before the 1997/98 crisis. This is discussed in detail in the subsection 2.1.3 (Financial and Economic Reforms in Thailand after the 1997 Crisis) of this chapter.

took some time to spread to EMEs but once forces of contagion set in, it affected the all and sundry without any distinction to their so-called strong economic fundamentals. Despite being decoupled, good growth rates, accumulation massive foreign exchange reserves, balanced budgets and higher consumption levels, several EMEs were hit hard by the final outfall of the crisis. Korea and Russia serves a pertinent example to substantiate the argument that these two countries hit hard despite their huge foreign exchange reserves. Mexico's financial sector was in good shape but due to its trade dependence on the United States, the country could not stand resilient to the economic shock. We have selected two EMEs i.e. Mexico and turkey to analyse the non-resilience of these economies. Both of these have the experience of at least two financial crises before the onslaught of the GFC of 2007 and both of these economies initiated the financial liberalisation and deregulation of domestic financial sector during the last thirty years.

3.1. MEXICO

Mexico serves as a prime example of a country that has shifted from a highly interventionist to a liberalized economic regime and plunged into several financial crisis during last 15 years. The decade of 1980s has been characterized as the lost decade for Mexico but given Mexico's far-reaching economic, trade and financial reforms and the signing of North American Free Trade Area in 1983, it was hoped that growth would resumed (Tornell and Martínez, 2004, p. 26). But Mexico's trade dependency on the United States and recurrent episodes of instability in the United States led the country into severe recession. According to Moody's, Mexico is the most exposed economy to the U.S. recession. There's an old saying that when the US economy gets a cold, the Mexican economy gets pneumonia and this view is corroborated by the fact that between 2000 and 2001, when the Internet bubble burst and the U.S. economy slowed from 3.7% to 0.8% , Mexico's GDP growth follow the decline (see the figure 3.3 above)

Figure 3.3: Average Annual Real GDP Growth in Mexico & USA (1985-2009)



Source: Economist Intelligence Unit online database.

3.1.1. Impact of the 2007 GFC on Mexico

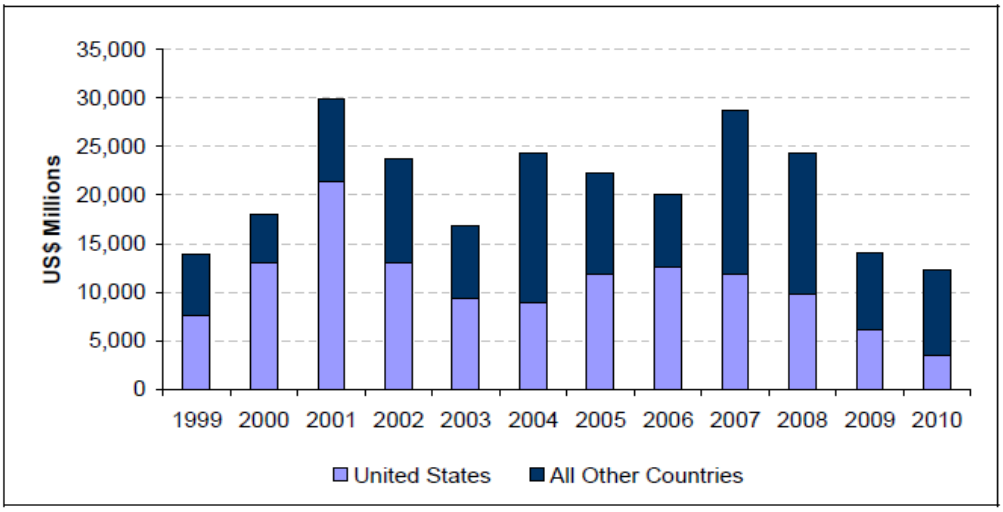
The GFC had severed adverse effects on the Mexican economy through two channels. The first is through the trade channel, particularly due to its economic ties and trade dependence (over 80% of Mexico's exports are directed to the United States) on the U.S. market (see the table 3.4 below). Lower consumer demand in the United States directly affected the demand for goods from Mexico (Villarreal, 2010). Secondly, due to extreme risk aversion among international investors and the global deleveraging process, Mexico was significantly constrained to access the international financial markets. Collectively, these two channels have adversely affected Mexico's GDP growth, employment, production in the manufacturing industry, and investor confidence (Villarreal, 2010). The recoupling effect increased volatility in the Mexican financial markets and Mexico's GDP contracted massively 6.6% in 2009, the sharpest decline of any of the Latin American economy (Kawai and Prasad, 2011).

Table 3.5: Mexico's Exports: 2003-2009 (U.S. $ in billions)								
Mexico's Exports	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**Change 2008-2009**
To the USA	144.3	164.5	183.6	211.8	223.4	234.6	193.3	-17.6%
Total Exports	164.8	188.0	214.2	249.9	272.0	292.6	229.6	-21.5%

Source; Mexico's Secretaría de Economía

Being vulnerable to US economic recession, Mexico's external sector contributed significantly to the financial slowdown in the Mexico. The flows of foreign direct investment (FDI) to Mexico dropped sharply in 2009 (see the figure 3.4 below). Although investment decisions are correlated with many factors but 2007 GFC was the prime factor. Total FDI flows to Mexico decreased by 42.5%, from 24.3$B billion in 2008 to 12.2$B billion in 2009.

Figure 3.4: Flows of Foreign Direct Investment to Mexico (US$ Millions)



Source: Mexico's *Secretaría de Economía*

Although FDI flows has been fluctuating since the last 10 year period between 1999 and 2009 as shown in Figure 3.4 above. 2007 GFC only amplified this decline. The highest growth rate of investment flows was registered in 2004 as 45.2% as compared to a decline of 29.1% during the previous year. As like the biggest trade partner, again, US is the largest investor in Mexico, accounting for 44.1% of investment flows in 2009 and over 50% of cumulative investment flows between 1999 and 2009. Manufacturing industry of the Mexico is the

highest recipient of FDI flows and next is the financial services industry. However following the 2007 GFC, both sectors experienced declines in FDI inflows. Approximately 44% of cumulative FDI flows to Mexico between 1999 and 2009 were in manufacturing and 26% were in financial services. FDI flows in manufacturing decreased by 30% in 2009, from $7.6 billion in 2008 to $5.3 billion in 2009, after reaching a peak of $13.7 billion in 2004 during the 1999-2009 periods (US Congress Report, 2010). Foreign remittances are the second-highest source of foreign currency for Mexico. The *Banco de México* (Mexico's Central Bank) reported on January 27, 2010, that official remittance inflows fell 16.0% in 2009 to $21.1 billion. Here again the main cause in the decline in remittances is the global financial crisis and the slowdown in the U.S. economy, because increasing joblessness heavily strained the Mexican immigrants in the USA. The decline in remittances to Mexico is significantly greater than the fall in remittances to other countries dependent on the U.S. economy.

Mexican financial sector was in a relatively better position to withstand the effects of 2007 GFC. Several factors can be pointed out as the contributor to the resilience of the banking sector. Mexican banking system had adequate levels of capital when the 2007 crisis erupted. Furthermore, banks were successful in maintaining a have high levels of capital adequacy despite the adverse credit conditions. Another important indicator of banks soundness is the leverage ratios and Mexican banks leverage ratios were lower even those observed in advanced economies. Despite the adverse economic conditions, banks were even generating profits during the crisis. However, their profitability declined in 2008 compared with the high levels of 2007 (BIS Paper No. 54, p. 282).

Like many other EMEs, the foreign exchange market in Mexico experienced increased stress and volatility after Lehman Brother's collapse. However Ministry of Finance and the central

bank of Mexico implemented a series of measures to promote stability and to create the conditions to prevent major capital outflow. Mexican government used the dollar surplus of the public sector to cover the deficit of the private sector. These measures led to a decline in the foreign exchange reserves of the Mexico. Central Bank of Mexico reduced the interest rate from 8.25% to 4.5% between the periods of highest financial strain in Mexico. Besides this decrease in inters rates, the twenty eight day interbank offer rate was also decreased. Besides this, Mexico clearly was incapable of undertaking countercyclical fiscal policies, sharply affected by the global crisis; its fiscal revenues deteriorated significantly, which exposed unfunded financial needs. Mexico's case clearly revealed that a vibrant financial sector is essential for the economy and diversification of trade is necessity to face the external shocks in a liberalised economic environment.

3.1.2. The Mexican Currency and the Banking Crisis of 1994-95

The Peso Crisis (which latter on turned into banking crisis) has its roots in the government polices of financial liberalisation and deregulation. Mexico initiated a program of economic, trade and financial reforms and embraced on liberalisation path since the late 1980s. Mexico negotiated a major trade agreement with the United States and Canada to indicate its zeal to open up its economy. In an attempt to encourage much needed capital inflows government took various initiatives to restore investors' confidence and resultantly capital inflows resumed to Mexico reaching $102 B between 1990 and 1994. This development singled that Mexico was on the right track and it became one of favorite destinations of investors. In 1993, Mexico received highest inflows in the region amounted $31billion of capital inflows, but due to unstable political conditions, Mexico failed in keeping the confidence of international investors. In an attempt to stabilize the markets foreign currency reserves were utilized. During 1994 Crisis, Mexico's foreign currency reserves dropped from $29.3 billion at the end of February to $25.9 billion at the end of March to $17.7 billion by the end of April. Mexican

foreign exchange and currency market was under severe pressures and this unsustainable situation compelled Mexico to seek the international assistance which obviously came with a price. Thus on March 24, U.S. authorities agreed a short- term credit facility for Mexico but it has to depreciate peso but falling reserves and losing value of Peso forced the government to float the currency eventually. On 20th December peso was devalued putting more constraints and the reserves. It is argued that Mexican banking sector was already in serious trouble due to flawed privatization and the Peso crisis 1994-95 only hastened its collapse. Haber and Kantor second the view and believe that "even had there been no peso crisis of 1994-1995, the Mexican banking system would have collapsed due to two factors. Firstly, the banks were already amassing large portfolios of non-performing loans; secondly banking institutions were undercapitalized and were not operating according to international standards (Haber and Kantor, 2003).

3.1.3. Government and Central Banks Policies to Respond Banking Crisis

Mexican government and the central bank responded 1994-95 banking crisis with a series of reforms and policy actions. These reforms can be classifies into three groups: reforms for the prevention of immediate collapse; reforms to support banks; and reforms aimed to support debtors. Authorities took urgent measures in early 1995 to cap the fall in international lending to Mexico. Despite authority's efforts to maintain bank capital ratios, banking sector was unable to roll over its debt obligations with the international banking institutions. In addition to this, government's dollar linked debt and country's lower foreign exchange reserves contributed to raise the uncertainty about the sustainability Mexico's financial markets. To ameliorate the situation, Banco de México (the Mexican central bank) injected loans denominated in U.S. dollars into the banks so they could fulfil their obligations and renew their loans. Central bank established a special dollar credit window to credit loans to 17 big commercial banks at penal rates 25% and 17.5% and lower rates were introduced for the

outstanding balances below some threshold (Dziobeck, 1998). Consequently all banks had repaid their loans in full by the September 1995. International financial institutions (IMF and other IFIs), United States and several other countries provided the resources for these above stated measures of the central bank. Central bank of Mexico asked the banks to ensure the minimum capital ratio and for this recapitalisation, commercial banks were required to issue subordinated debt. For this purpose FOBAPROA (the government agency responsible for dealing with bank insolvencies) obtained a credit line from the central bank and funded the acquisition of the subordinated debt. Non-performing loans were a serious issue to address. Mexican government through central bank provided the support to resolve this issue and purchased the NPLs of banks with promissory notes issued by FOBAPROA[48]. Some 12 banks were insolvent despite this support and eventually Mexicana authorities intervene and take the charge of these failing banks between the end-1994 and August 1997 (BIS Policy Brief, 2006, pp. 167-169). Furthermore, deposit insurance system was created in 1998. All these measures resulted in avoiding a mass bank run and the wide spread collapse of the domestic financial markets (Martínez, 1998). Government also abandoned its fixed exchange rate policy and adopted a floating exchange rate regime.

3.1.4. Analysis of Mexico's Financial Liberalisation/Deregulation Policies

Mexico's history of financial liberalisation and deregulation is essential a history of crisis[49]. A brief review of Mexico's recent economic history will help us understand how its financial and economic troubles began and spread. Until the early 1980s, Mexico had a strongly protectionist economic policies with high trade barriers. After the Mexican 1982 debt crisis, Mexico's trade policy began to change. The Mexican government took a series of steps toward unilateral trade liberalisation in 1989 to attract foreign investment and make the

[48] These notes substituted the NPLs in the asset side of banks' balance sheets.
[49] It has the distinction of suffering through all forms of financial crisis; debt crisis in 80s, currency and the banking crisis in 1994-95 and lastly the 2007 GFC.

country more competitive in non-oil exports (Brid and Ros, 2009). During the same period Mexico proposed negotiations for a free trade agreement with the United States. Nevertheless, the between 1975 and 1995 was very turbulent financial and economically as the nation experienced repeated currency, debt and banking crisis which ultimately has devastating effects on real economy (Fed Reserve Report, 2006).

Mexican government implemented a series of market-oriented reforms during the 1982-85 in a bid to attain the status of a liberalized market economy. These reforms culminated in implementation of the North American Free Trade Agreement (NAFTA) in 1994. Reforms included fiscal measures, privatization of government operated enterprises and the opening up of economy to foreign investment and trade liberalisation. However despite of all these efforts and reforms, Mexico's economic growth since 1985 has been modest (FRB Minneapolis Report, 2009). At the beginning of the 1982 debt crisis in Mexico, its banking sector was nationalised. There were about 60 institutions in Mexico when the nationalisation took place. Due to long period of financial repression, Mexico's banking sector could not develop necessary market and credit risk management capacity. Gradually, country started to lift restrictions on the banking institutions and interest rates caps were removed in 1989. By the early 1990s, after a decade of mergers (consists of 18 banks), Mexico privatised its banking system. Mexican authorities introduced new regulations to make its banking institutions sound and encourage these institutions to comply the international accounting and banking standards. Central bank's higher liquidity requirements were also eliminated in 1992. After these relaxations and incentive, banks took an irresponsible recourse, involved in risky investments and begin to get troubles. Due to banking sector's limited capacities and risk management skills problem of banking sector aggravated furthered and unfortunately, Mexican supervisory and regulatory authorities too lack the required capacity and skill to deal

with such situation. It was again the case of deregulation without placing required regulatory frameworks necessary for the success of banks in markets based environment.

Mexico‘s deregulation policies or the privatization process was flawed due to three inter-related features of Mexico’s overall political economy. A first important factor is the limitless discretion of the government which generated a high risk environment for bankers. Due to this discretion, Mexican banks were able to circumvent the regulations and one president could expropriate at will and the next could then privatize the banks. The second contributing component was the government’s desire to maximize revenues. Lastly incapacity and failure of authorities to enforce contract and property rights was important factor behind flawed process of deregulation. All these factors collectively made the privatization process full of deficiencies. Investors in the banking sector had overpaid and wanted to recover their investments immediately, but, soon they realized that they neither had mechanisms to assess the credit worthiness of borrowers nor did they have the ability to enforce their contract rights once loans went bad (Sigmond, 2010, p. 11).

An inefficient judicial and legal system contributed to more risks for banks and financial institutions. Newly privatized banking sector was not following the international standard (i.e. IAS) and norms and resultantly banks themselves piled on huge risks. Aggressive competition among banks in loans also exacerbated the fragile financial situation. A massive expansion of credit in a short period of time was accumulated in one sector; the loans for housing and real-estate from December 1991 to December 1994 nearly tripled. Non-performing loans increased as well. By December 1992 the ratio had climbed to 4.7% and by December 1994 had reached 6.1%. Supervisory and regulatory loopholes were very obvious. Sidaoui claimed that it was precisely the weakness of the financial system and the loopholes within the regulatory and

supervisory frameworks that exacerbated its aftermath. Additionally, he states that "the unlimited deposit insurance scheme, which protected all banks' liabilities without any restriction, induced moral hazard and increased the cost of banking resolution." Poor banking skills and conflicts of interests, specifically related to lending, were also contributing factors. Like Haber and Kantor, Sidaoui believed that the judicial system was also very inefficient. Many loans were written off because of the issues directly related to the inefficient judicial and regulatory procedures that involved the recovery of loans from bankrupted companies. The legal framework proved to favor debtors over creditors (Sigmond, 2010, pp. 12-13). The result of all this was the inevitable bank failures.

Deregulation of domestic financial system and trade liberalisation can be source of faster long-run growth only when it is accompanied by a sound regulatory framework and comprehensive macroeconomic set of policies. NAFTA failed to significantly reduce the trade barriers from their already low levels. A key shortcoming of the Mexico's liberalisation program was that it was not accompanied by truly needed judicial and structural reforms. On the financial front, privatization of banks in the early 1990s and the reforms following the 1995 tequila crisis have not been effective in producing a sound banking facilities to Mexican enterprises (FRB of Minneapolis Report, 2009, p. 4).

In the aftermath of the twin crisis of 1994-95, Mexico put forth efforts to demonstrate its seriousness in its economic management by adopting tight monetary and fiscal policies to reduce inflation and absorb some of the costs of the banking sector crisis. Government took several steps to restructure the economy and lessen the impact of the currency crisis among the more disadvantaged sectors of the economy. The austerity plan included an increase in the value-added tax, budget cuts, and increases in electricity and gasoline prices to decrease

demand and government subsidies, and tighter monetary policy**.** Key reforms included measures to reduce public debt, the introduction of a balanced budget rule, an inflation targeting framework and a floating exchange rate policy. Mexico's experience clearly demonstrate that that its potential to promote economic growth, increase productivity, and lower the poverty rate is very limited without implementing substantial structural reforms. Besides all these bottlenecks, the inefficiency of its financial sector has kept Mexico from benefiting from its trade liberalisation policies.

Mexico hit hard during and after the 2007 GFC due to its trade dependency on United States despite its substantially regulated banking sector and its low exposure to toxic assets. It is evident that even if a country's financial sector is well regulated and healthy but its weak macroeconomic position and particularly trade dependence on big trade partner can makes it vulnerable and fragile to any external shock. Mexico's case also manifests that a transition from a completely controlled to a liberalised economy should be gradual and accompanied by necessary reforms and sound macroeconomic framework.

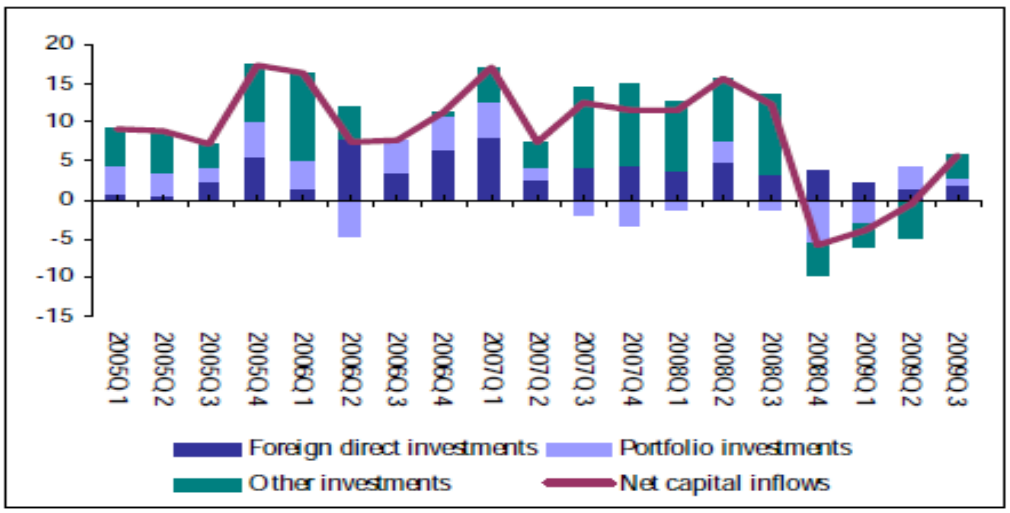
3.2. TURKEY

The Turkish economy has faced at least five different financial cries and recessions since it has moved towards a market based liberalised economy. Country faced foreign debt crisis in 1979. It was followed by a "stabilisation and liberalisation programme" in 1980 when Turkey took various steps to liberalise its trade and finance and opened its capital account in 1989 (Uygur, 2010). During the liberalized regime, first crisis occurred in 1994 under a managed float exchange rate regime; the second crisis erupted in the second half of November 2002 in the midst of an exchange rate based stabilization program. Lastly it is severely affected by the contagion of GFC of 2007.

3.2.1. Impact of the 2007 GFC

Turkey is one of the hardest hit emerging economies by the 2007 GFC. It's GDP declined by -8.8% and unemployment level reached unprecedented in the Turkish history (Rodrik, 2012). Although the banking and financial sector has remained relatively robust during the crisis, but the real economy and exports sector has been seriously affected through international trade channel (BIS Paper No. 54, 2010). Turkish manufacturing sector contracted because banking sectors trimmed lending to manufacturing units. In the first eight months of 2008 industrial production declined to 3.6% year on year from 5.8% in the same period before the crisis. Another important channel was the foreign capital flow channel, cross-border lending abated during the crisis period. Like many other EMEs, capital inflows have fallen (see the figure 3.5 below) substantially during the crisis period due to supply and demand influences of the market).

Figure; 3.5 Net capital inflows to Turkey (US$ Billion)



Source of (BIS Paper No 54, p. 392).

Large firms expurgated their investments in 2009 and rolled over only about 70% of their foreign currency liabilities. External borrowing for banks and non-bank entities squeezed due to strained financial conditions globally. However, total decline in the capital inflows was less

than the expectations.The outstanding amount of the private sector's external liabilities also declined during the crisis period (Yörükoğlu and Atasoy, 2010). Workers's remittances are not vital and important item in the Turkish capital account in comparison to other EMEs. External borrowing for banks and non-bank entities squeezed due to strained financial conditions globally but total decline in the capital inflows was less than the expectations (Yörükoğlu and Atasoy, 2010). To cap the sluggish economic activity and stagnant exports, the Turkish Government announced a comprehensive stimulus package including tax cuts in the housing and automotive sectors, financial support to small and medium enterprises, and extending a line for export credits.

The impact in banking sector remained to a relatively limited extent in comparison with many other countries mainly due to banking sector's high capital adequacy ratio and low leverage and currency risks. Additionally, Turkish banks minimum exposure to the troubled assets also smoothed the effects and unlike several other EMEs it insulated from the effects of financial balance sheet mismatches. Two most important factors are behind this banking sector resilience. Firstly, in contrast to some other EMEs, Turkish banking sector had no currency mismatches when the crisis reached the country. Secondly, the lower proportion of foreign banks in the Turkish banking sector in comparison with many other EMEs also shield off its banking sector from speculation and instability. Thus, there were no bank failures in Turkey during the 2007 GFC (See Annexure 7: Financial situation of Turkish banks before and during the 2007 GFC). This stability of banking sector allowed government some fiscal space and government did not spend any public resources on the banking sector. Nevertheless, the contraction in real economy led to the contraction of sharp demand for banking services and financial institutions were rather conservative in their lending (CBRT Report, 2010).

3.2.2. A Brief analysis of Turkeys Liberalisation and De-regulation Reforms

Turkey like many other EMEs had followed an inward-looking economic policy till 1970s. Some earlier attempts to liberalise the economy were made during 1950–53 but a full scale financial reforms were initiated in January 1980. These reforms were launched with a comprehensive structural adjustment program aimed at (i) minimizing state intervention; (ii) establishing a free market economy and (iii) integrating the economy with the global economic system (Alici and Ozgoker, 2006, p. 18). These reforms got momentum in 1983 when "Motherland Party" came into power and the government was determined to remove price controls and subsidies, expand of private sector, private savings and investments, reduced tariffs and barriers from foreign trade sector , improvement in the tax system, and finally encouragement to FDI (Koch and Chaudhary, 2001).

Legal and institutional reforms to support deregulation of domestic financial system took place between the period of 1980 and 1989. State restrictions were removed from the domestic and external financial intermediation. To encourage FDI, government issued a "*The Foreign Capital Framework Decree*" in the 1980 and government established a The Foreign Investment Directorate (Koch and Chaudhary, 2001). Capital Markets Law was enacted in 1981 and foreign banks entry was allowed with the abolition of interest rate ceilings. To support and ensure the policy continuity, government established "Istanbul Stock Exchange" in 1986 and "Istanbul Gold Exchange" in 1994. Furthermore, government allowed residents to open foreign currency accounts in 1984 and also allowed banks to have interbank borrowing with overnight facilities in 1986 (Denizer and Dinc, 2000, p. 6). Consequently, number of foreign equity ventures increased to 2900 and foreign capital inflows to US$ 7,572 million during 1980 to 1995 (Tatoglu and Glaister, 1998). Turkish Derivatives Exchange, VOB (2002) was another important step to deepen the financial markets instruments.

However lack of a regulatory environment to guide the activities of banks operating in the new environment, in effective interventions in the resolution of possible shocks and liquidity problems led to bankruptcies of some financial institutions in 1982. This revealed that the liberalisation and resulting market competition alone were not enough to strengthen the financial system quickly (Ulgen, 2010). According to Celasun *et al.* (1999), the financial sector of the country, despite the beneficial effects of liberalisation efforts, operated in an unstable environment and therefore, the reforms undertaken in the 1990s could not improve its efficacy. Due to liberalisation of the capital account in 1989, the economy became more integrated into the international circuits but this evolution put the Turkey's debt sustainability dependent on the free markets increasing the banking system liquidity problems enormously. In the absence of adequate legal and supervisory frameworks, the banking system weaknesses have amplified the existing instability of real economy eventually leading to 2000-2001 crisis.

Nonetheless, Turkish experience of 2001 and 2007 strongly exhibit that a financially liberalised economy without strong macroeconomic fundamentals is always prone to vulnerability in the form of external financial markets and changes in global financial markets. It also reveals that complete financial liberalisation is not the best policy and the capital account opening must be the last step when financial liberalisation is followed

3.2.3. Turkish Experience with the 2000-01 Crisis

This subsection has analysed the main factors that caused the 2000-01 financial crisis and attempts to identify the structural sources of instability in the Turkish context as a financially liberalised economy. Turkey went through a very severe economic crisis in November 2000 and in February 2001. Failure of the public sector to maintain its targets and incomplete implementation of structural adjustment reforms (market based polices) were stated as the main cause of the crisis. However, a closer examination of the issue reveals that crisis was

deeply rooted in the hasty financial liberalisation and the deregulation of the domestic banking sector in the early 90s. These reforms left the domestic economy on the mercy of the unfettered market forces (Yeldan, 2002, p. 4).

Poor macroeconomic performance is immediately noticeable when we look at the 2000 macroeconomic data (See the table 3.5 below). All macroeconomic indicators including public sector borrowing requirement, ratio of public debt to GNP, current account deficit, inflation level, and the ratio of liabilities of financial sector to official reserves were above the targets paving the seeds of public sector fragility (See also Annexure 8: Turkish Economy under the Crisis 2000-2001). During this period, the internal debt of the country showed a phenomenal increase from 14% of GNP in 1990 without any duty losses to 46% in 1999 with 17% out of it as the state banks' duty losses. Such a rapid increase in debt can be attributed mainly to high primary deficit indeed (Koch and Chaudhary, 2001, p. 474).

Table 3.6: Fiscal Fragility in Turkish Economy (*As Ratios to the GNP (%)*

	1995	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
Current Account Balance	-1.4	-1.3	-1.4	1.0	-0.7	-4.8	1.4
Foreign Debt Stock	42.8	46.2	47.8	47.2	55.7	59.1	74.3
Domestic Debt Stock	14.6	18.8	21.4	22.5	29.3	28.7	68.1
Budget Balance	-4.0	-8.3	-7.6	-7.0	-11.6	-11.6	-18.2
Non-Interest (Primary) Budget	3.4	1.7	0.1	4.7	2.1	4.2	5.1
Public Sector Borrowing Req.	5.2	8.8	7.6	9.2	15.1	12.5	15.4

Sources: SPO *Main Economic Indicators* ; Undersecreteriat of Treasury, *Main Economic Indicators;*

Despite its apparent macroeconomic deterioration, fiscal fragility of the economy was not the trigger of the crisis. Fragile banking sector lies at the roots of fragility and financial crisis. The main source of the fragility of the Turkish financial sector can be traced back to the 1989 decision to eliminate all the regulatory controls on the capital account in accordance to

financial liberalisation programme. Elimination of controls left the domestic asset markets to be totally dependent on the short term, speculative movements of foreign capital flows. Consequently, flow of finance has been drifted from industry and the real sector of the economy towards the financial sector speculation of the short term capital flows. It was the arrival of casino capitalism (or Ponzi finance) in Turkey. Under such a structure, when macroeconomic fundamentals were weak, there were no regulatory frameworks in place; the Turkish economy has offered speculative arbitrage rates reaching at times over 100% during the 1990s.

Given the weakness in the banking system (highly burdened with government's debt instruments), weak financial governance and inadequate accounting and management practices, it is no surprise that the crisis triggering factors were closely related to the banking sector. Turkish financial markets were highly under developed in terms of instruments and products. Thus huge public sector borrowing requirement and limited policy credibility of the authorities raised the cost of domestic funds in the context of shallow financial markets. Another igniting factor was the delay in reforming the banking sector which has created a dichotomy between the state owned and private sector banks. State owned banks, were suffering from duty losses and these banks had been heavily dependent on overnight funds found it difficult to do business in a newly liberalised environment. Furthermore, government borrowings from state owned banks added to the fragility. These policies, coupled with the upward trend in banks' government debt instruments portfolios, increased the vulnerability of the banking system as a whole (Özatay, 2002, p. 2). In short, poor public sector management, a weak balance of payments, political instability, a poorly regulated financial sector, rigid labour markets, the limited resources available for financially constrained households and

firms, and overall macroeconomic instability led to extensive volatility in prices and economic activity.

3.2.4. Analysis of Regulatory Reforms in Turkey

Financial crisis 2000-2001 led to significant economic and financial sector reforms in Turkey. Structural measures and a banking sector re-capitalization programs were sought to contain the deterioration of real economy and financial sector. Weak banks were taken over by the Savings Deposit Insurance Fund (SDIF), some of the banks were re-capitalized or merged, or both, while some were actually sold. A politically independent board of directors was appointed to protect the interests of depositors (Özatay, 2002, p. 6). Structural weaknesses of the Turkish economy were fully realized and policies were adopted to restructure and reform the Turkish economy as a whole. Turkey abandoned the fixed exchange rate regime; its central bank was given more independence to pursue a credible monetary policy and a mandate toward an inflation targeting regime. To achieve these objectives, an authoritative and independent Monetary Policy Committee was created. Furthermore, institutional reforms aimed to increase the role of markets, restructure the state banks, and lowering the public sector burden on the economy were pursued (Yilmaz, 2006).

The Banking Regulation and Supervision Agency (BRSA) was established in September 2000 as a separate institution of regulation for the banking sector. For the compliance with new rules enacted, the Law on the Central Bank of the Republic of Turkey (CBRT) was also amended with a clear mandate of CBRT is to "achieve and maintain price stability". New law requires the CBT to cut off credits to public institutions including the Treasury (Yilmaz, 2006). In February 2002 a re-capitalization law was passed to finalize the restructuring of the financial sector. A debt management law, designed like a fiscal responsibility act, was enacted by Parliament at the beginning of 2002, (Özatay, 2002, p. 7). Full compliance with

international standards on accounting, reporting and auditing was pursued. From 1st November 2006, Turkish financial regulatory system ensured the Regulation on measurement and evaluation of capital adequacy ratios of the banks (Yörükoğlu and Atasoy, 2010, p. 410). In the first five years following the reforms real growth has averaged over 7% and monetary transmission mechanism gains strength resulting in a decline in inflation to single digit levels. The Turkish experience demonstrates that financial liberalisation and market mechanism alone are unable to provide a stable macroeconomic environment. Immediate dismantling of the public mechanisms of regulation can lead to a catastrophic situation. Hastily structured liberalized economy without adequate institutions, regulatory framework and stabilisation policies cannot lead to a sustained economy (Ulgen, 2010). Financial liberalisation reforms and opening up reforms must be sequenced with meticulous caution and must be gradually implemented to mitigate the fragilities of the banking and no banking firms (Bhattacharya, 1997). There for, it is advisable for EMES like Turkey to develop policies within the framework of a macroeconomic action plan beyond the beliefs of the liberalism. To sum up the discussion of the above two non-resilient countries (Mexico and Turkey), it can be argued that hasty financial liberalisation and inadequate regulatory frameworks put these economies in a difficult situation. The 2007 GFC has only augmented the already weak macroeconomic situation of these economies. However, Reisen has termed the contagion of the GFC of 2007 as the pure contagion[50]that hits countries regardless of the level of their economic development and integration **(**Reisen, 2008).

Over all analysis of the different EMEs in the above pages reveals hasty (ill- conceived and ill-done) financial liberalisation/deregulation and opening up of capital accounts were the main reasons behind various crisis in these economies particular in Thailand. However, after

[50] Different then the financial and the trade contagion channels. It is a systemic and simultaneous breakdown of money and bank markets that leads to generalised risk aversion and the shedding of all assets that fail to carry public guarantees.

the painful experience of financial crises in 80s and 90s both Thailand and Chile reconsidered their policies and particularly focus on reforming the financial and banking sector. As a result both of these economies were in a better position at the onslaught of the GFC of 2007 and their central banks were quite prepared to deal with the situation. Nonetheless, those EMEs who have learnt lessons from the past crisis and focused on improving their macroeconomic fundamentals and building regulatory apparatus performed (like Thailand and Chile) well during the 2007 financial crisis. Several EMEs that had strengthened "their banks' capital levels in the aftermath of banking crises in the 1990s experienced no financial crisis per se" (Cecchetti *et al.*,2011, p. 2). However overall better performance can be attributed to various policy choices and we cannot single out one factor behind. According to Cecchetti *et al.*, "better-performing economies featured a better-capitalised banking sector, lower loan-to-deposit ratios, a current account surplus, high foreign exchange reserves and low levels and growth rates of private sector credit-to-GDP. In other words, sound policy decisions and institutions reduced their vulnerability to the financial crisis. But these economies also featured a low level of financial openness and less exposure to US creditors, suggesting that good luck played a part" (Cecchetti et al., 2011, p. 19)

3.3. Some Policy Implications

During the past two decades, majority of EMEs have pursued the policies rooted in the neoliberal agenda (the Washington consensus policies). This resulted in the rapid integration of these economies with the advanced financial markets around the globe. Alongside the positive impact liberalisation and financial integration, EMEs have to face financial crisis and instability. Majority of the EMEs got prey to household debt-driven asset bubbles and heightened FX market volatility. These various crises not only destabilised the national economies and threatened the global financial stability also. We have presented a thorough analysis of these issues in this chapter and now to sum up our discussion we have pointed out

some important lessons/policy implications for the EMEs generally and highlighted the some challenges as well that these economies are facing in post crisis era.

3.3.1. Analysis of Resilience and Policies for the Crisis Prevention

A detailed analysis of various episodes of financial crisis from the EMEs and specific countries studies in this chapter have established that financial crisis are endemic to financial liberalisation; however financial crisis also lead to reforms to address the issues and problems of the crisis. The 2007 originated in the most advanced financial centre of the capitalism (i.e. USA) corroborate the view that deregulated financial markets can be source of instability and fragility with spill over impact on the real economy. The 2007 GFC has also exposed the structural vulnerabilities of globalized financial transactions and their internal and external dimensions. Initially, it was perceived that EMEs have decoupled from the financial fragility of subprime collapsed and the failure of Lehman Brothers. However, when the contagion spread out, the actual ability of EMEs to insulate completely from the developments in advanced countries has witnessed. Although EMEs have the varied macroeconomic and financial impact depending upon level of integration and country specific characteristics, yet EMEs as a group have weathered the global recession 2008 better than the advanced economies. The resilience of certain EMEs to the crisis while others in the group clearly reflects the policy choices made by EMEs in the pre and post crisis years and also highlights the structural factors that differ between these two groups and thus played a role in resilience. EMEs with disciplined macroeconomic policies, high levels of domestic saving, sound banking systems with buildup of capital buffers (i.e. the foreign exchange reserves) in good times and less dependence on foreign finance (especially external debt and bank loans) appear to have been less affected by the crisis (Kose and Prasad, 2010).

Following the Asian financial crisis of 1997-98 and individual country specific crisis majority of the EMEs have built up large buffers of foreign exchange reserves. It was intended partly

as a result of export-oriented growth strategies and partly as a form of self-insurance against crisis associated with sudden stops or reversals of capital inflows. The total stock of international reserves held by emerging markets rose from about $0.5 trillion in 1990 to $5 trillion as of September 2009. As a group, EMEs mostly has been net exporters of capital during the last decade and half. The most of these economies have become less reliant on foreign finance and external debt to finance their growth.

Over the years EMEs have increased their trade linkages and diversified their exports which actually keep them resilient as a group. Commodity-exporting countries particularly have been shielded to some extent from the slowdowns in the advanced economies by strong growth in the EMEs. Divergence of EME business cycles from advanced economies is another important factor. This has happened on account of the factors noted above, along with greater intra-group trade and financial linkages. Nonetheless, it can be argued that foreign exchange reserve cannot provide a perfect shield against any external shock to the economy. A country with higher levels of foreign exchange reserves (eg. South Korea) but have underdeveloped financial markets are unable to weathered the financial crisis. In brief, here in the 3rd chapter of the study, we have provided a detailed catalogue of important factors which caused relative resilience of EMEs during the 2007 GFC.

The 2007 GFC has also challenged the relevance of financial liberalisation model[51] for the EMEs. Liberalisation polices without appropriate regulatory framework and supervisory functions of the government (or the public authorities) have failed to keep pace with the speed of financial innovations and complex financial instruments of the financial markets. Deregulated financial markets without proper regulatory capture (and with the presence of financial activities in the shadow banking system) have proved a failure in the most advanced financial centre (i.e. the United States) of the capitalist world (Kang, 2010, p. 44). Experience

[51] The ill done financial liberalisation

of different EMEs under analysis in this chapter has shown that capital account liberalisation can prove catastrophic unless it is accompanied by prudential measures aimed at limiting risk-taking behaviour of the domestic financial institutions. Regulatory measures will essentially work like capital controls thus limiting the ability of domestic financial institutions to acquire certain types of risky and destabilizing foreign assets. EMEs have learned a lot from the experiences of the 90s and generally have persuaded more stable macroeconomic policies (flexible exchange coupled with inflation targeting regimes) as compared to their counter parts in the AEs. Indeed these policies together act as shock absorbers for external shocks (IMF, 2011)

What are the ideal polices required preventing the reoccurrence of financial crisis and to a more stable financial system/ markets is not easy question to answer. There is no single policy agenda to be followed by everyone and off course one size fit all policy advice is also not desirable. EMEs and AEs need different set of policies keeping in view country specific macroeconomic dynamics, depth and development of financial markets, nature of trade and the level of integration with the global economy and markets. Therefore *"so one size fits"* all type policy advice will go in vain. Most of the AEs have introduced quantitative easing in their economy while EMEs are facing the challenge of reversal of capital inflows. Thus a very cautious and well thought out approach is recommended for the EMEs, while as a general policy framework can be the same like followed by the advanced economies. 2007 GFC and several other crisis episodes from EMEs analyzed in the above pages has clearly demonstrates that although market mechanisms are important for the well function of financial system and overall economy but markets alone cannot resolve system-wide failures. Thus appropriate regulatory framework and the prudential supervision are critical for a healthy and sound the financial system (discussed in detail in the next chapter).

Another very important policy measures Capital controls, have regained their legitimacy after the 2007 GFC, although they are conflicting with international rules on free trade but they have emerged as a general global trend of financial reregulation in response to the crisis by some EMEs. Both the IMF and BIS have acknowledged the need for EMEs to curb destabilising capital flows by endorsing capital controls as a last line of defence against volatile and excessive financial flows in extraordinary circumstances (BIS, 2011; IMF, 2011a, 2011b). Keeping in view the institutional and capacity constraints and the globalised nature of financial markets now days, the vulnerability of EMEs with open capital accounts is hard to overcome at national level. It requires a global solution. Coordinated capital controls at the global level are needed to tame destructive volatile capital flows. Another important policy advice for EMEs is that instead to be obsessed by financial liberalisation and global financial expansion, EMEs must focus on capital development of the economy, strengthening their financial markets by improving the banking sector's basic role of stable financial intermediation and promoting financial inclusion of the population.

EMEs must take into account the errors of the advanced economies who failed to understand the distinction between free markets and unregulated markets (Acemoglu, 2009). Therefore, EMEs must avoid the ambiguous belief that market mechanisms are sufficient to reallocate resources towards efficient uses. Blind and hasty liberalisation of financial markets must be reviewed in favor of more realistic and objective regulatory frameworks which should have to deal with the characteristics of a monetary/decentralized market economy. Speedy integration of EMEs into world economy as compared to the advanced economies experience and influx of huge capital inflows relative to the size of their financial markets and economies increased the vulnerability of these economies to internal and external shocks. Some other lessons are not new, but are indeed reinforced by the 2007 GFC (Rojas-Suarez, 2010).

The 2007 GFC also showed that it is a highly desirable policy for EMEs to diversify their trade and accumulate large stocks of international reserves as insurance against volatility. Resilient financial sector and sound banking institutes is a key to shield against external shock, therefore EMEs must have clear policy about the domestic and foreign banks role to complement to the robustness of the financial system. The most important conclusion can be drawn about the shape and contours of financial regulation in EMEs (This has debated at length in the chapter 4). EMEs should design regulatory framework to meet the particular features of their own economies and regional settings and not those of advanced economies. As in previous episodes of adverse external shocks from EMEs, the 2007 GFC once again demonstrated that low savings rates are an important constraint for the specific development models of the EMEs.

3.3.2. Specific Challenges for the EMEs after the GFC

Emerging markets are facing significant short- and medium-term challenges, including the development of their financial systems and deepening of their financial markets (Claessens, 2008). Most of the EMEs have dealt well with the short term policy challenges like the *"sudden stop*" of capital inflows driven by global deleveraging. EMEs have utilized the buffers like foreign exchange reserves. Several economies asked for the official external financing to expand their 'policy space'. Some EMEs applied for swap facilities from major advanced economy central banks like Mexico. IMF also provided financial support directly through balance-of-payments and as a contingency through credit lines.

Long term policy challenges are really important to address for EMEs to sustain their position in an integrated world economy. Many EMEs face institutional constraints to respond and skillful handling of external inflows and exchange rate depreciations. The application and adaptation of international banking standards is another daunting challenge for the EMEs. International standards are biased towards the advanced economies including a more liberal

institutional environment. To date, EMEs have had a small stake in the global standard setting bodies which has made it difficult to adopt better international practices (Claessens and Underhill, 2005). EMEs also lack the institutional capacity to meet these challenges. Another pertinent lesson to EMEs that these economies can give more reliance to market based approaches in regulation and supervision, but this does not mean at all that everything should be left on market mechanism**.** A fully and completely liberalized financial markets approach may not be the best strategy for EMEs. This should be done gradually while developing the necessary institutional infrastructure and capital account must be the last to liberalize. Different cases discussed in this chapter have shown that financial sector reforms are important preconditions for preventing crisis and enhancing financial stability in EMEs.

Conclusion

The 2007 GFC that has its origin in the United States has severely affected the EMEs with varied final impact and differences in the degrees of intensity. GFC came as an external shock as compared to previous crisis in EMEs which were mostly home-grown. However, the 2007 GFC has exposed the strengths and weaknesses of the current paradigm of development in EMEs which is based on liberalized capital accounts and significantly improved macroeconomic conditions. Our analytical investigation has identified key characteristics that have made these economies more or less vulnerable to a transmission of crisis from the advanced economies. Financial liberalisation reforms without adequate regulatory frameworks and export dependence of EMEs has made these economies vulnerable to external and internal shocks. Nonetheless, country characteristics played a significant role in the variation of response and initial impact of the crisis. Our analysis shows that strong macroeconomic fundamentals, trade diversification and the quality of financial regulation can reduce the vulnerability of initial shock. It is evident that that weak financial and banking system are not compatible with financial opening, therefore comprehensive regulatory

frameworks must be in place before going for full scale liberalisation. EMEs require safeguards against global speculative volatilities. Financial regulation in most of the EMEs needs to be designed to meet the particular features of their own economy and not those of industrial countries. Best approach for EMEs is to build sustained macroeconomic policy frameworks and must not only focus on the neoliberal policy paradigm *led* by invisible hand. Public authorities, regulators and supervisors from the EMEs have to assure that participants of the market act according to the rules. The third chapter has paved the way to close our discussion of financial crisis by discussing the issues pertain the regulation of the financial sector in the next and 4th chapter of the study.

Chapter 4: REGULATORY CHALLENGES AND REFORMS AFTER THE 2007 GFC

"The more free-market oriented our economy, the greater its need for official financial supervision" **Henry Kaufman, Financial Times, August 6, 2008**

The 2007 GFC has revealed the critical gaps and weaknesses not only in the United States' regulatory framework but also pointed towards the existence of unregulated financial segments around the globe. The Financial Crisis Inquiry Commission Report concludes that the 2007 GFC has stemmed from failures in regulation and supervision (FCIC Report, 2011). Several other influential reports (de Larosière Report, the Geneva Report (2009), the Turner Report (2009), the Group 30 Report (2008) and the APEC Report (2011) gives a broadly agreed view that the insufficient reach of regulation is the one of critical contributors of the 2007 GFC and the solution is bridge these gaps by taking existing regulation and spread it across institutions and jurisdictions.

It has been five years into the 2007 GFC, but ideal policy paradigms are still not clear. Policymakers are examining that how economic and regulatory policy should interact during financial boom and bust periods and afterward (IMF, 2011). Thus the crisis has challenged the regulatory authorities around the globe and underscores the need to think "out of the box'" and implement unorthodox policies and reforms to stabilise the financial markets and financial system (Dewatripont and Freixas, 2012). Financial regulation has become a central topic of debate globally because crisis has established that traditional forms of financial regulation are inadequate. It has been observed that each crisis is followed by new regulatory measures, therefore it is emphasized that policy makers should not superficially react to the ostensible characters and colors of the current crisis. More regulation is not the solution, but a comprehensive set of regulation which has the potential to dynamically evolve with the

financial system is required. Traditional forms of microprudential regulation (designed to insure the safety and soundness of individual financial intermediaries) based on the self-correction of markets have failed. A broadly agreed consensus has emerged about the effectiveness of macroprudential regulation. It is evident that not only the private market discipline has failed but the public surveillance also proved ineffective to fully expose the extent of vulnerabilities and to act decisively.

Generally, every financial crisis or asset prices burst is always followed by an abundance of technical explanations and identify some specific malfunction of financial markets and financial instruments. It is argued that if regulatory authorities focus on some common features which repeatedly reappear in each financial crisis, it can be more useful to identify the specific regulatory failures and building adequate policy response or remedies. It must be noted that the ideal policy and regulatory responses are not clear and market discipline may work more poorly as well. However, a look across the history can serve as guidelines where common patterns of financial behavior can be identified and subsequently an alternative model can be suggested. However the magnitude in terms of costs and the depth of 2007 GFC makes it different in certain respects from earlier episodes of crisis and specifically highlights main flaws in the current regulatory arrangements. Crisis has established that regulatory frameworks must recognize the complexities of the modern finance and financial markets. Regulation should be compatible with the incentives of private individuals and complements market discipline. Another important aspect is keeping in view the wholeness of the financial system and in this vain regulation must have the macroprudential orientation. It is useless to regulate banks, insurance companies alone in hope that their constrained action will impose discipline to the entire system (Tonveronachi, 2010, p. 136). It is clear that regulators need to do a better job of identifying and assessing systemic risks posed by large, complex institutions

and aim to minimize the gaps in regulatory jurisdictions (Bair, 2011). Thus a fundamental deduction from the recent experience of financial crisis is that a microprudential approach towards regulation is not sufficient. A regulatory policy with a macroprudential perspective that can evaluates and responds to the financial system as a whole seems necessary (Hirtle *et al.*, 2009).

With this background the fourth chapter offers an analytical overview of recent developments in regulatory frameworks both in AEs and EMEs and point towards clearly the outstanding challenges to improving regulation, efficiency of markets, and access to the financial system. This chapter emphasized some fundamentals principles to design a better regulatory policy proposed by various influential regulatory reports and identifies the flaws in the current regulatory system. Lastly, it is suggested that a regulation with macroprudential orientation can serve better to achieve the stability of the financial markets and system. In this aim, this chapter addresses some main themes about the ongoing debate on financial regulation with a view to clarifying the policy and regulatory issues.

With the hindsight, the section 1 of the chapter recapitulates the policy goals of a regulatory policy and categorizes some principles to achieve these goals. These are applicable to both AEs and EMEs, nonetheless specific regulatory needs of EMEs have highlighted in the end of first section. Section 2 of the chapter gives an extensive review of the recently introduced regulatory reforms (The Dodd–Frank Wall Street Reform and Consumer Protection Act 2010 and the Basel III: A Global Regulatory Framework for More Resilient Banking Systems). An in-depth critical evaluation of these reforms is presented and it is emphasized that these reforms are heavily embedded in the orthodox theoretical foundations and there will not be drastic change in the status quo. This section has also pointed out the negative impact of these

reforms on the EMEs. Section 3 gives a detailed examination of macroprudential approach of financial regulation. It is followed by the conclusion of the chapter.

Section 1: Fundamental Goals and Principles of Regulation

The following section reviews the basic objectives of financial regulation and highlights the fundamental principles necessary for an effective regulatory framework. Creating the right incentives that shape behaviours of market participants is the fundamental to any set of reforms to limits excessive risk taking. It also supports to internalize negative externalities of the financial firms. Undoubtedly, the best regulatory frameworks are those which minimize the frequency and severity of financial crisis but such frameworks are not available. Therefore, limiting the regulatory arbitrage and maintaining the diversity in the financial system at the same time seems a key goal of regulatory authorities (Mavrellis, 2011, p. 3).

1.1. The Policy Goals of Financial Regulation

Traditional economic theory suggests that there are three main purposes of regulation (Geneva Report, 2009. p 20).

1. To constrain the use of monopoly power and the prevention of serious distortions to competition and the maintenance of market integrity,
2. To protect the essential needs of ordinary people in cases where information is hard or costly to obtain, and mistakes could devastate welfare and
3. Where there are sufficient externalities that the social, and overall, costs of market failure exceed both the private costs of failure and the extra costs of regulation.

Thus, containment of monopoly power, reduction in information asymmetries, improvement in transparency and reducing the costs of externalities are the fundamental goals of a regulator policy. Prevention of market failures, managing the systemic risk of contagion from too big too fail intuitions and protection of investors/and consumers have also been identified as the main goals of a regulatory policy (Caria, 2011, p. 2). Drawing on a large number of official

reports and inquiries i.e. de Larosière Report, the Turner Report (2009), Geneva Report (2009) the Group 30 Report (2008, pp. 21-24) and the APEC Report (2011), following basic goals of a regulatory policy are identified and emphasized.

1.1.1. Safety and Soundness of Financial Institutions

Safety and soundness of individual financial institutions can be ensured through a framework of effective regulation. Market failures can lead to instability of the financial institutions and key financial markets. Markets are not self-regulating (not self-correcting) and existence of market failure like information asymmetries warrants a regulatory policy to address such issues (Caria, 2011, p. 2). Conventionally, banking and insurance companies have been regulated with a combination of examination rules, prudential measures of supervision and protection of an individual institution. For individual soundness, capital base of an institution is most important concern for regulatory authorities. For securities and derivatives like products, the regulatory approach has involved more rules-based enforcement of regulatory perimeter, with prescriptive rules relating to capital requirements, customer protection, and business conduct.

1.1.2. Mitigation of Systemic Risk

Systemic risk generally refers to the impairment of the overall functioning of the system caused by the breakdown of one or more of the key market components (G-30 Report, 2008). Therefore, a predominant policy goal is to monitor the overall functioning of the financial system as a whole and to mitigate the tendencies of systemic risk. Traditionally regulatory approach to address this important issue is to watch the too big too institutions due their interconnectedness to this system and if such institutions are in sound health, it means the entire system is sound. This fallacy has proved a failure during the 2007 GFC as the crisis was a manifestation of systemic failure of regulation (Levine, 2011). It is observed during the 2007 GFC that financial systems cannot function effectively without confidence in the

markets and financial institutions. Any major disruption to the financial system can reduce confidence in the ability of markets to function smoothly which ultimately leads to impair the availability of credit and equity, eventually impacting adversely real economic activity. Failure of big or too interconnected institutions can result in a systemic risk and its contagion to the whole financial system. One agreed policy framework to deal with systemic risk is the implementation of macroprudential regulation and this issue is discussed in detail in the section three of this chapter).

1.1.3. Fairness and Efficiency of the Markets

Efficient pricing is a hall mark of well-functioning markets and this efficiency is achieved through the availability of assets price information and preventions of insider trading and any other anticompetitive behaviors. Transparency of all material information to investors is very vital in this scenario. A transparent regulatory environment supports the fairness and efficiency by mandating financial institutions about disclosure of key information. Thus the disclosure of information permits market participants to make optimal decisions with complete information. However, transparency goals may be offset by conflict of interest of a particular financial institution e.g. maintenance of safety and soundness and market continuity. It may be possible that a financial institution that is experiencing liquidity issues may require holding some information to minimize speculation while the investors in the institution need timely and accurate information and these investors believe that the market prices for an institution's stock reflect the disclosure of all material information. There for these divergent considerations may lead to disparate responses by different regulatory authorities.

1.1.4. Protection of Customers and Investors

Protection of customers and investors is another important objective of regulation and it is ensured through business conduct rules. Particularly when transparency requirements alone

are not sufficient then investors are protected by rules that mandate fair treatment and high standards of business conduct by intermediaries. Thus conduct-of-business rules ultimately lead to greater confidence in the financial system ensuring potentially greater market participation. Business conduct regulation emphasized the transparency, disclosure, suitability, investor protection and ensures fair dealing in the markets. Traditionally, securities markets observe these rules since decades; however as the banks have ventured further from their traditional business models and involved in more risky products and services, particularly to retail customers, these business conduct restrictions are applied by banking regulators more broadly. For the achievement of this goal, United States government has allowed special provisions in the Dodd-Frank Act (discussed in detail in next section)

1.2. Key Principles of Regulations

A reconsideration of basic principles of regulation seems necessary for designing an effective and flexible regulatory mechanism to effectively deal with risky innovations and systemic risks. Various reports have been commissioned from the apex bodies[52] to look into regulatory reforms in the after math of 2007 GFC. Among these the most influential are: de Larosière Report, The Group-30 report, the Geneva Report titled as "The Fundamental Principles of Financial Regulation", The Turner Review by Financial Stability Authority (FSA) and lastly G-20 Report. All these eminent reports have generally acknowledge that regulation and supervision in the advanced economies was clearly too lax in recent past and that there needs to be considerable rethinking leading to much strengthened, and perhaps, intrusive regulation and supervision in the financial sector. All these reports also broadly agreed on the core principles of regulation. Deputy Governor of RBI (Reserve Bank of India) has argued that it is high time to review the existing policies of the financial regulation and address the acute policy dilemmas. Post crisis period suggest to embark upon a fundamental rethink on broader

[52] E.g. Basel, Group 20 etc.

frameworks of regulatory and supervisory policies (Reddy, 2008). Nevertheless, it is argued that financial crisis cannot be eliminated completely but their depth and extent can be minimised by better regulatory mechanisms. Some key principles recommended by the famous regulatory reports and policy makers are elaborated in the following.

1.2.1. Striking the Right Balance between Innovations and Regulation

Financial innovations generally circumvent the regulatory restrictions. However, nature of the regulatory framework has been identified as important factor influencing the innovation activities in the financial markets. Each type of regulation generates different impacts and even a single type of regulation can influence innovation in various ways depending on how the regulatory framework is actually implemented by the authorities (Calomiris, 2009, p. 66). Nevertheless, it is emphasized that the regulation should not prevent innovations and this is particularly very pertinent for the EMEs who need deep financial markets to meet a growing real economy needs. There is no doubt that the financial innovations associated with securitization and repo finance were at least in part motivated by regulatory arbitrage but it does not mean that eliminating such instruments can ensure a stable financial system. Keeping a balance between financial innovation and regulation is not an easy task however authorities can ensure that needed infrastructure to support innovative activities is in place and properly functioning. In this aim enhanced supervision, improved governance and internal controls of financial intermediaries are suggested (Lumpkin, 2009).

1.2.2. Dealing with Systemic Risks

Dealing with systemic risk has emerged as the central issue after the 2007 GFC due to the enormity of the costs associated with systemic failures. Experiences of various financial crisis shows that systemic risk emerges when aggregate capitalization of the financial sector is low. During the 2007 GFC, a full-blown systemic risk emerged only when the government sponsored enterprise (GSEs), Lehman, AIG, Merrill Lynch, Washington Mutual, Wachovia,

and Citigroup, among others, effectively failed (Acharya et al., 2010). Generally capital adequacies ratio is used to cap the externalities but this proved inadequate. Regulators assumed that enhanced capital adequacy ratios can make the financial system sound as a whole. Apparently it sounds like a like a truism, but practically it represents a fallacy of composition[53]. In an attempt to remain sound banks and financial institutions with high leverages can be source of instability for the whole system. This can be explained further by taking the example of panic selling. It may be prudent on the part of an individual bank to sell assets when they perceived higher prices but if all banks act like that, the asset price will collapse. This situation will force regulatory institutions to take some actions to rectify the situation which ultimately results in generalised declines in asset prices, and to enhanced correlations and volatility in asset markets putting the entire system on risk. Although Risk is endogenous to the bank behavior but this endogeneity of risk increased by several factors like some regulatory factors, measures of transparency and the increasing role of current market (Geneva Report, 2009, p. 16). One agreed policy framework to deal with systemic risk is the implementation of macroprudential regulation and this issue is discussed in detail in the section three of this chapter)

The current problem with financial regulation is that the regulation seeks to limit each institution's risk in isolation. Individual firm may take actions to prevent their own collapse, but not necessarily the collapse of the system. It is in this sense that the financial institution's risk is a negative externality on the system (Acharya et al., 2010). United States has enacted

[53]A fallacy of composition is defined as an illogical projection to an aggregate, based upon the assumption that a local relationship projects unchanged to the whole.A fallacy of composition arises when one infers that something is true for the whole from the fact that it is true for each of the individual components of the whole. The most pertinent scenario of this fallacy is the situation of a financial crisis. In an effort to remain safer, banks, and other highly leveraged financial intermediaries, can behave in a way that collectively undermines the whole system. E.g. selling an asset when the price of risk increases, is a prudent response from the perspective of an individual bank. But if many banks act in this way, the asset price will collapse, forcing institutions to take yet further steps to rectify the situation. It is, in part, the responses of the banks themselves to such pressures that lead to generalised declines in asset prices, and enhanced correlations and volatility in asset markets.

the Dodd-Frank Act to deal with this issue (discussed in detail in next section). Section 113 of this Act authorized the newly created Financial Stability Oversight Council (FSOC) to supervise the nonbank-affiliated financial firms to prudential standards. Section 165 of the Dodd-Frank Act requires the Board of Governors of the Federal Reserve to design special prudential standards for bank holding companies whose assets exceeds the limit of $50 billion (Tarullo, 2011, p. 2).

1.2.3. Higher Capital Requirements

It has been observed that higher quality of capital enables banking firms to absorb losses and provide a more effective first line of defense and limit the systemic spillovers to the financial system**.** Therefore higher capital requirements have been clearly recognized as a measure to enhance the level of the capital buffers held by financial institutions. In an attempt to respond to the vulnerability of lower capital buffers, The US treasury has pronounced a set of core principles for capital and liquidity requirements. Most important of these principles are; firstly capital requirement should be designed to protect the stability of the financial system as a whole, not just the solvency some specific institutions. Secondly, these requirements should be higher for those institutions that pose threat to overall financial stability. Thirdly banking institutions should be subject to a simple non-risk based leverage constraints (Acharya and Richardson, 2009). Due to havocs of the shadow banking system observed during the 2007 GFC, it is key challenge for authorities to redesign of the regulatory system to determine the appropriate level of capital adequacy standards for institutions operating in the shadow banking system.

1.2.4. Countercyclical Provisioning

In addition to increasing the capital requirements, it always desirable to reevaluate the existing capital requirements to ensure that in they do not augment the systemic financial distress. Existing risk-weighted capital requirements can sometimes exacerbate financial

panics by leading financial institutions to raise capital by panic selling (Brunnermier *et al.*, 2009). The alternative of countercyclical capital requirements however creates complications in terms of defining and measuring the business cycle which even in relatively stable and calm periods is not easy in real time to distinguish between trends and cyclical movements in output. This becomes even more difficult for authorities in the EMEs where business cycles tend be more persistent (Aguiar and Gopinath, 2007). Counter-cyclical regulation is basically aimed to reduce the systemic risk that arises due to fluctuating conditions of an institution, or market. Thus it regulates on the basis of the extent of risk of individual institutions or market; these measures are tough during a credit boom and more relaxed during a crisis (Geneva Report, 2009, p. 49).

1.2.5. Dealing with Liquidity Risk and Leverage

Liquidity Risk and leverage require a careful consideration in the design and implementation of regulatory process. Therefore regulatory authorities will need to establish clear parameters for financial firms to manage their liquidity risk and limit leverage because liquidity risk can heighten the counterparty risk in the financial system. Additionally, liquidity risk monitoring becomes more imperative due to interconnectedness of the financial system or due to the sheer size of one individual institution. Therefore, limiting leverage at both the institution-specific and aggregate levels is necessary to ensure that excess leverage at either of these levels does not lead towards systemic breakdowns. Other related regulatory measures like regulatory oversight of payment, clearing and settlement systems aid to ensure that they are not subject to failures as a result of the failure of one or two institutions with large counterparty exposure. Generally regulatory authorities' asses the capital requirements on the basis of risks associated but experience of the 2007 GFC shows that authorities must consider the broader relationship among credit liquidity and market risk because these risks can interact amplify in the times of crisis. This necessitates regulatory authority to consider

different aspects of risks at the level of individual institutions and at a broader systemic level (Prasad, 2010).

1.2.6. Proper Resolution Mechanism for Failing Financial Institutions

During the 2007 financial crisis massive government bailouts packages were administered for the troubled financial institutions in the USA, UK and several other advanced economies. Failure of Lehman Brothers clearly revealed the potential risk attached to the failure of a systemically important financial institutions. This made a strong case to apply special procedures for mitigating the transmission of financial shocks throughout the financial system and economy. Ad hoc measures like government bailouts packages create moral hazard for the financial institutions and encourage them to take more risk. On the other hand, the application of ordinary insolvency law proves ineffective to contain the contagion of the distress. To avoid such instance, a proper and effective resolution mechanism must be part of regulatory policy. This is the evidence that if government does not intervene to support the distressed institutions the whole financial system is destabilized and collapse. But this very support of government creates moral hazard because every institutions and bank believe that these have implicit government backing in the event of failure. Dealing with moral hazards is an important issue to deal because it can create perverse incentive and stifle competition in the financial markets. A possible solution to this moral hazard problem is to create a resolution mechanism were by even a large financial institution can be allowed to fail in an orderly manner so that the system remain shield off from the spillovers distressed institutions. Two aspects of resolution mechanism are important. Firstly, regulators need the information and the ability to execute a very rapid transfer of complex assets to a private sector purchaser. Preparation of living wills of financial institutions and replacing the ordinary property rights (conventional bankruptcy laws) with sweeping legal powers is needed. Second important issue is funding of the resolution plans. In order to differentiate this from ad hoc bailouts and

the associated moral hazard, a discrete fund[54] with a small or even no recourse to public funds is required (Armour, 2010).

1.2.7. Macroprudential Approach to Regulation

A broader consensus has emerged in the post 2007 GFC era about the significance of macroprudential orientation toward the regulation. It has been accepted that evaluation and financial risk management must be conducted for the system as a whole and focus on individual institutions has proved futile. Modern days financial system have become very complex and due to higher interconnectedness within the system, institution specific financial risk can quickly get transformed into aggregate level risk. To limit and manage this risk requires that monitoring of specific institutions and the aggregate risks is warranted in principle. Macroprudential regulation is recommended for this purpose because this approach concerns itself with the stability of the financial system as a whole, while in contrast, microprudential regulation, concerns itself with the stability of individual institutions and the protection of individual players. Furthermore , macroprudential orientation towards regulation take into account issues of endogenous risk, whereas micro approach incorporates only exogenous risks and thus responds and examine individual banks and financial institutions (Borio, 2005; Borio and White, 2004 and Persaud, 2000).

Macroprudential Approach is important for EMEs also, there for beefing up prudential regulation in these economies is highly endorsed. Mostly, the banking sector has proved to be a root cause of financial crisis in EMEs. To prevent crisis, governments of EMEs must improve prudential regulation and supervision of banks to limit their risk taking activities. First, regulators should ensure that banks hold sufficient capital to cushion the losses in the wake of economic/financial shocks. Macro prudential supervision can promote a safer and

[54] Since the GFC has erupted, bailouts with tax payer funds has been administered, eg. cases of American International Group (AIG) in the United states, Royal Bank of Scotland Group in UK.

sound banking system by ensuring that banks have proper risk measurement and management procedures in place and banks have internal controls to prevent fraud or unauthorized activities. For prudential supervision to work in a desired fashion, prudential supervisors must have adequate resources, skills and training to do the job. But due to these capacity constraints, it is a particularly serious problem in EMEs. Although the central banks in many EMEs have come a long way yet more independence in regulation and supervision can increase the likelihood that authorities can better perform their job. We have discussed macroprudential approach in detail in the section three of this chapter.

1.2.8. Some Miscellaneous Measures

These include coordination among different regulatory agencies and upgrading the accounting standards because all above stated measures needed to support by improvement in accounting standards Improved accounting standards are particularly important for EMEs but these economies lack in this area because of capacity and skill constraints (Geneva Report, 2009, p. 67). Failing governance in financial institutions particularly oversight and inappropriate risk management techniques played a key role in overall failure of regulation in the crisis of 2007(G30 Report, 2009). Therefore it is utmost important for regulatory policy to ensure improved governance in financial institutions. Walker has rightly noted that "the fact that different banks operating in the same geography, in the same financial and market environment and under the same regulatory arrangements generated such massively different outcomes can only be fully explained in terms of differences in the way they were run"(Walker, 2009, p.6). In this aim, Clarke and Klettner (2009) have emphasized that improved governance in risk management; remuneration and disclosure are critical elements of a better regulatory regime. Another important measure is improvement in the proper information disclosures of the financial institutions. It is observed that financial institutions have incentives to hide information from bank supervisors in order to avoid restrictions on their

activities, and financial institutions are quite adept at hiding these risks. Sometimes supervisors lack the required expertise to deal with such institutions and political pressures also limit the regulators job. To resolve these issues regulatory authorities and financial markets need to discipline the activities of financial institutions by promoting proper disclosure by banking and other financial institutions about their balance sheet positions.

1.3. Regulation for EMEs

All above discussed basic principles of regulation hold for the EMEs too as these economies have gradually moved to deregulated and liberalized markets. Nonetheless, EMEs have their own country specific challenges besides resisting the global instability and uncertainties. It is argued that the objective of securing a resilient financial system should be balanced with the goal of financial deepening and efficiency in EMEs. For EMEs, regulatory framework must be a part of the overall macroeconomic framework to keep in consideration specific economic growth objectives. It is argued that despite the failures of markets, EMEs should not give up market mechanism when it's about regulating the financial sector. This requires EMEs to adopt for the market harnessing rather than market-restricting approach to regulation (Geneva Report, 2009; G-30 Report, 2010).

EMEs require some flexibility from global financial reforms agenda. The new regulatory paradigm is taking place at the global level but most of the debates and reports have focused heavily on advanced financial markets. This obviously does not mean that each and every country must adopt the same regulatory system. Financial reforms need to be not only universal; there must be some flexibility to accommodate the differences in each country's financial market. A few examples qualify to explain the argument more clearly, unlike their global counterparts, investment banks in EMEs are in a position to take more risks as compared to the investment banks in advanced economies because investment banking

industry is fundamentally different in EMEs as compared to AEs. Another example is about the over the counter (OTC) products ; in majority of the EMEs OTC derivatives markets are not very active or even do not exists at all. A stricter regulatory regime at the global level sound reasonable in the post crisis 2007 scenario but an overemphasis on centralized clearing platforms and standardization can result in choking the innovative spirit of EMEs financier markets (G-30 Report, 2010).

EMEs capital markets are not yet well developed despite reforms. Therefore overstressing standardization could prevent products from following their natural life cycle and slow financial market development. The optimal position between innovation and stability in EMEs is far different from that of well developed economies (G-20, 2011, pp. 78-79). Therefore, a two-tier approach must followed which asks for stricter regulations for the advanced economies and relatively less stringent requirements are allowed for the EMEs.

Dealing with institutional and capacity constraints is the biggest challenge for EMEs and these EMEs have to deal with it on priority basis because these constraints can limit the effectiveness of regulation and thus hinder the stability of the financial markets and overall financial stability of the system. Experiences of AEs show that the concept of a single regulator may not be feasible for the EMEs. It is desirable foe EMEs to follow a viable approach and an oversight body may be created that effectively coordinate the work of individual regulatory agencies, minimize the regulatory arbitrage, prevent large gaps from opening up in the regulatory framework and monitor the regulation of large institutions with operations in multiple markets. EMEs central banks have got capabilities of doing all these measures over the years and have successfully dealt with various episodes of financial crisis in past and even the latest one. So this suggested oversight body can be within the central banks (Geneva Report, 2009, pp. 79-80).

Another extremely important issue for EMEs is the monitoring and oversight of foreign borrowings. A sensible regulatory approach can be used to balance the benefits of foreign currency denominated debt against the attendant currency risk. In EMEs, the regulatory reform agenda is in fact closely tied to the financial development agenda. However, the design of financial regulation is not an easy and straight-forward task. Geneva Report 2009 suggests that financial regulation should be focussed, primarily rule-based, (because discretion will be hard to use during periods of boom/euphoria), and time and state-varying (light during normal periods, increasing as systemic threats build up) (Geneva Report, 2009, p. 81).

All these above discussed measures don not ensure that financial crisis would not erupt again or the compliance of all these measures would result in permanent stability of the financial system. In the words of Tarullo[55] "it would be unrealistic, even dangerous, to believe that asset bubbles, excessive leverage, poor risk assessment, and the crises such phenomena produce can all be prevented. The goal of the regulatory regime should be to reduce the likely incidence of such crises and, perhaps more importantly, to limit their severity when they do occur. This argues for fostering a financial sector capable of withstanding systemic stresses and still continuing to provide reasonably well-functioning capital intermediation through lending and other activities. The aim is not to avoid all losses or any retrenchment in lending and capital markets. It is to prevent financial markets from freezing up as they did in the latter part of 2008" (Tarullo, 2011, p. 8)

To sum up the above analysis, it can be argued that a proper financial regulation is a fundamental determinant of the shape and the structure of a financial system. Thus it becomes

[55] Member of the Board of Governors of the Federal Reserve System.

utmost important for the regulatory authorities to define an appropriate regulatory structure and framework which is conducive to financial stability, that allow fair competition and supports financial innovation. Undoubtedly, this is a very challenging task and how authorities have tried to respond the regulatory inadequacies highlighted after the 2007 GFC is discussed it in detail in the following section.

Section 2: Critical Assessment of the Introduced Regulatory Reforms

In response to 2007 GFC two important set of reforms were introduced, firstly the Dodd Frank Act (2010) in the United States and secondly the BASEL III regulations which are global in nature. We start with a summary of these two set of reforms and highlight their primary inadequacies. Our analysis reveals that BASEL III, like its predecessors, is fundamentally flawed and is biased towards the financial markets of EMEs (Acharya, 2012). Let's begin by the analysis of the Dodd–Frank Act 2010.

2.1. The Dodd–Frank Wall Street Reform and Consumer Protection Act (2010)

The Dodd-Frank Wall Street Reform and Consumer Protection Act approved by the Obama administration on 21 July 2010 is perhaps the most ambitious and far-reaching overhaul of financial regulation since the 1930s. The US Government concluded that "*Years without accountability for Wall Street and big Banks brought us the worst financial crisis since the Great Depression, the loss of 8 million Jobs, failed business, a drop in housing prices and wiped out personal savings. The failures that led to this crisis require bold action. We must restore responsibility and accountability in our financial system to give American confidence that there is a system in place that works for and protects them. We must create a sound foundation to grow the economy and create jobs".* By accepting the crisis as a result of the financial deregulation started in the 1980s, came along the Dodd-Frank Act which is made up of 2,300 pages and over 300 resolutions. The Act became the centerpiece for regulation

reform in the United States, essentially impacting a great part of the US banking system. Main features/provisions of the Dodd-Frank Act are highlighted below **(**U.S. Government, 2011).

2.1.1. Measures for Systemic Safety

The Act has focused to deal with the systemic risks particularly. The previous approach of regulation targeted the individual institutions in an understanding that individual soundness of the financial system would result in the safety of the entire financial system. However 2007 GFC has revealed the fragility of such understanding. Therefore, the act has approved the establishment of a Financial Stability Oversight Council (FSOC) to identify the likely institutions or markets that can generate systemic risk risks. According to this council all banking institutions with assets of more than US$ 50 Billion are classified as systemically important institutions, although council has the discretion to monitor other institutions also. It is now mandatory for systemically important institutions to prepare their living wills and disclose their plan in the event of they are liquidated to avoid panic and contagion throughout the entire system. This measure will prevent the need for bank bailouts and liquidity support from the FDIC to individual institutions as it was done during the financial crisis.

Table 4.1. The Current Leverage & Risk-based Capital Requirements for Banks

		To be considered "well capitalized"	To be considered "adequately capitalized"
Minimum risk-based capital ratios	Tier 1 capital ratio	6%	4%
	Total capital ratio	10%	8%
Minimum leverage Ratio[56]		5%	4%
Source: United States Government,2010			

[56] A 3% minimum leverage ratio applies for institutions if the FDIC determines that the institution is not anticipating or experiencing significant growth, has well-diversified risk, among other factors, and is rated composite "1" under the CAMELS rating system.

2.1.2. Volcker Rule

Volker Rule provisions are set out in section 619 of the Dodd-Frank Act. Volcker Rule requires the systemically important non-bank financial companies to put in place heightened capital requirements and quantitative limits. Basically the provisions in the Dodd-Frank Act call for measures to resolve the problems that have emerged from the multifunction banking permitted under Gramm–Leach–Bliley Act (GLB) Act of 1999. Thus these rules distinguish between the traditional credit operations of the banks and the trading of bonds.

2.1.3. Collins Amendment

Collins amendment required the federal banking agencies to establish minimum leverage ratios and ensure the risk-based capital requirements. This amendment has also created a statutory floor and now the U.S. banking regulators would be able to implement Basel III regulations only if these are consistent with the statutory floor created by the Collins Amendment. Essentially, this means that now more stringent regulations (then the Basel III) have to comply would by financial institutions that are covered by the FDIC and the bank holding companies.

2.1.4. Consumer Financial Protection Bureau (CFPB)

This bureau is established to ensure that common people have access to information before making purchases. Due to the enormity and the cost of the crisis to common man in the mortgage securities debacle, the ultimate objective of this bureau is to protect consumers by giving them maximum information, thus this bureau gives special attention to the mortgage market, bond markets, etc.

2.2. Basel III: A Global Regulatory Framework for More Resilient Banking Systems

The Basel Accords[57] for banks are based on a system of minimum capital requirements and believe the ability of markets to efficiently measure and manage risks. The newly enacted Basel III is a comprehensive set of reform measures, developed by the Basel Committee on Banking Supervision, to strengthen the regulation, supervision and risk management of the banking sector. These measures aim to (i) improve the banking system's resiliency regarding shocks resulting from financial and economic stress, (ii) improve risk management and governance, and (iii) reinforce bank transparency and the disclosure of information. Another important feature of these reforms is its macroprudential aspect aim to eliminate a systemic risk and the pro-cyclic character of these risks (BCBS, 2010a). Important provisions of the BASEL III vows to address the following issues.

2.2.1. Enhanced Capital Requirements

Basel III regulatory rules have addressed the quality, consistency and transparency of the capital base by introducing regulatory adjustments to Tier 1 capital. Thus risk coverage requirements has been increased and enhanced transparency is ensured. The minimum requirement for common equity is elevated from 2% to 4.5%. Table 4.2 below shows the timeline of phasing in the minimum capital requirements from 2013 till January 1, 2019.

2.2.2. The Leverage Ratio and Better Risk Coverage

Basel III has introduced a simple leverage ratio[58] which will serve as a cushion against the risk-based transactions. This measure will halt the banks traders to restructure risky assets by packaging and selling loans or by transferring assets out of the banking book into the trading books. This measure is specially meant for capital markets because now it covers complex

[57] Basel I Capital Accord was issued in 1998, and then Basel II, issued in 2006.
[58] The leverage ratio is a measure of a bank's Tier 1 capital as a percentage of its assets plus off-balance sheet (OBS) exposures and derivatives.

securitized instruments, certain off-balance exposures, trading book exposures, as well as counterpart credit risk (BCBS, 2010a).

2.2.3. Capital Cushions

Financial institutions are required to build up capital cushions in good times. But these cushions are allowed to withdrawn in the event of instability or financial turbulence. A capital conservation buffer, set at a 2.5% rate of the common equity is required to implement by the banks. Furthermore, contra-cyclical buffer are also created which will allow for an increase of the cushion by an extra 2.5% in the extreme events of bubble formations (BCBS, 2010a).

Table 4.2: Timeline of Phasing-in Basel III Capital Requirements

Minimum Capital Requirements	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**Jan 2019**
Common equity (CE)	3.50%	4.00%	4.50%	4.50%	4.50%	4.50%	4.50%
CET 1 (Common Equity Tier 1 Capital)	4.50%	5%	6%	6%	6%	6%	6%
CCB*	--	--	--	0.63%	1.25%	1.88%	2.50%
Counter-cyclical buffer (CcB)**	0-2.5% Depending on the severity and stage of the business cycle						
CE+CCB+CcB	3.5%-6%	4%-6.5%	4.5%-7%	5.125%-7.625%	5.75%-8.25%	6.375%-8.875%	7%-9.5%
Total Capital	4.5%-7%	5.5%-8%	6%-8.5%	6.625%-9.125%	7.25%-9.75%	7.875%-10.375%	8.5%-11%

* Capital Conservation Buffer (CCB) is a fund the bank can draw on during times of stress.

**CcB is used when excess aggregate credit growth is judged to be associated with systemic risk. The Basel Committee stipulates that it should be infrequently used, once every 10-20 years.

Source: BCBS (2010) *Results of the Comprehensive Quantitative Impact Study*, BIS, Basel.

2.2.4. Minimum Global Liquidity Standards

These standards are created to ensure to improve banks' ability to bear with short-term financial instabilities and to improve their long-term financing base. Accord has suggested two instruments in this regard: a liquidity coverage ratio (LCR) and a net stable funding ratio (NSFR). However besides all plus points, Basel III has its limitations and most importantly, it does not have the force of law. The Accord would permit even less equity capital than Dodd-

Frank and, it may be temporary, as it is only a test, from January 1, 2013 to January 1, 2017. Some obvious shortcomings in the Basel III are: (i) Basel requirements employ static risk-weights on asset classes and fail to capture any time-variation in relative risks of assets; (ii) Reforms have failed to recognize that risk weights alter incentives of the financial sector be exposed to different asset classes; (iii) They ignore as a result any correlated or concentrated exposure of the financial sector to an asset class that has looked historically stable; and (iv) It does not employ more direct firm-level or asset-level leverage restrictions. It is also questioned that whether the new higher capital ratios are high enough. Seven percent capital ratio apparently seems reasonable as it is higher than the existing four percent, but it is still not very high by historical standards. A look at previous 100 years history of banking reveals that bank capital ratios higher than 20 percent also exist (Eichengreen, 2011). IMF also posits that the BASEL III requirements are quite low (IMF, 2010). Basel Committee has not set global standards on countercyclical capital provisions and delegated it respective national authorities. BASEL III supports the capital surcharge on "systemically important" financial institutions, the argument in favor is compelling, both as a way of prefunding rescues of systemically important institutions and as a deterrent to growing too large, connected and systemically important to fail. But its indeterminate yet how high this surcharge should be and how to measure systemic importance. Due to strong bank lobbying, it's not sure that the surcharge will be sufficiently high and that the definition of systemic importance will be sufficiently encompassing (Eichengreen, 2011, pp. 2-3). Lastly BASEL III offers no alternative to the role of rating agencies in assessing the riskiness of complex securities held by banks.

2.3. Analysis and Critical Assessment of the Reforms

A pertinent question appears here that have Dodd-Frank Act and the Basel III accord made the financial markets stable or crisis resistance? The answer is hardly affirmative. These

regulatory reforms are based on mainstream theoretical framework or the orthodox agenda and therefore seem inadequate and insufficient to avoid a new vulnerabilities or recurrence of events like 2007 GFC As discussed in detail in the previous pages, orthodox approach believes that stability of the financial markets lies in the complete markets and synergy in the provision and hedging of financial services. While the heterodox economist, Minsky‘s reform proposals are more concerned to create such economic structures which can contribute to the capital development through productive investments in the economy. International bodies like Basel have failed to adopt Minsky insights about the development of financial fragility. These institutions can design proper reforms for the containment of fragility and crisis only when his vision of financial fragility is internalized and his insights are duly assimilated in their reforms agenda. Same can be concluded about the Dodd-Frank approach on reforms. According to Kregel and Papadimitriou, “the limitations of the Dodd-Frank approach make it likely that we won’t have to wait long to find out” (Kregel and Papadimitriou, 2012, p. 1). The major drawback of the current regulatory approach is its inability to think and conceive reforms outside the mainstream theory and policy. 2007 GFC has clearly refuted the ability of mainstream approach (that markets are self-correcting) to contain the instability and crisis and reforms based on this theory would not make any difference. Minsky was fully aware about the shortcomings of the mainstream approach and “believed that regulation could only be discussed within a theory that allowed for financial distress as an endogenous occurrence in the normal development of the economic system. Even in the presence of the perfect operation of complete markets, Minsky’s approach suggested that the financial system would become increasingly exposed to financial disruption and, eventually, a systemic breakdown in the form of a financial crisis” (Levy Report , 2011, p. 8).

The advocates of the Dodd-Frank- Act insist that it has been most significant financial reforms act since the Great Depression. There are at least four primary shortcomings of the Dodd-Franck Act. Firstly, the issue of distortive role of government guarantees to the financial sector is not issued properly. Secondly, the Act requires establishing an ill-conceived resolution authority to deal with uncertainty in the event of any financial crisis. Thirdly, regulating by form rather than function in several restrictions being imposed on the Fed's LOLR role. And fourthly, Act do not adequately deal with shadow banking issue, especially with collections of individually small contracts and markets such as repo financing and money market funds which are systemically important. The long-term implementation of these reforms is underway since in the fall of 2010. The Act sets a variety of deadlines for the rule making about prudential regulation, mostly at one-year time-point from when the Act was enacted (July 2010). For instance, designation of financial institutions as systemically important ones, issues regarding the central clearance of derivatives and on what platforms, FDIC's orderly liquidation authority for systemically important institutions, and separation of proprietary trading from bank-holding companies, are all due in terms of initial proposals some time in second half of 2011. However, many of these rules will then be up against a public opinion and appeals period, and the implementation will follow in the few years after the rules are finalized.

One the major objective of the Dodd-Frank Act was to eliminate the threat of *"too big to fail"* type financial institutions to the financial system and real economy to save taxpayers money for expensive bail outs. But practically the system has become even more concentrated leaving largest banks even larger. President of Fed of Dallas (Richard Fisher) is not optimistic. According to him, "Dodd-Frank may actually perpetuate an already dangerous trend of increasing the bank industry concentration (Fisher, 2012, p. 1). Indeed the top five

conglomerates now account for over 50% of total industry assets and three of these are over and near on the 10% limit on the share of national deposits set by the 1994 Riegle-Neal Act meant for liberalising the branch banking. Furthermore, Dodd- Frank Act has not addressed the most important issues like too big too fail banks (Black, 2010; Buiter, 2009; Cho, 2009). Some other vital subjects pertaining about highly leveraged interconnected institutions, bank executives bonus structures (Bebchuk and Spamann, 2009; Crotty, 2008), conflicted credit-ratings agencies (Partony, 2006), the inadequate regulatory capture of agencies (Johnson and Kwak, 2010), and the issues pertains the identification and prosecution of financial engineers indulged in fraudulent practices (Prasch, 2010) are also not adequately dealt in the act. After the three years of the Dodd-Frank act, US banks continue to be large and integrated. Influential lobbies in the reforms process has had make it believe that large, integrated financial institutions create synergy in providing a broad range of financial services and minimize risks.

Distorted incentive structure and compensation packages of traders and executives have been identified as an important factor behind the 2007 GFC , but newly introduced reforms specially Dodd-Frank Act has only introduce some limits on the size and form of compensation. An important issue to be address by any regulatory reforms is the evolving role of financial innovation. Main stream approach prefers market mechanisms to price risk and thus allows the markets to indulge in more risky investments. Mainstream approaches don not take into account the capital development needs of an economy and thus the regulatory frameworks of this approach suggest only temporary solutions. While on the other hand Minsky believes that regulatory regime must be consistent with, and sensitive to, the evolving nature of financial innovation, and should seek to foster two critical structural objectives: (1) ensuring the long-term stability of the financial system, and (2) promoting the capital

development of the economy (Levy, 2011, p. 3). Unfortunately, the Basel III and the Dodd-Frank Act are expected to accomplish none of these aforementioned tasks. Basel III is still a rule-based regulation, and does not address the fundamental issues stemming from the natural instability of the financial system. It fails to change the banks' behavior and cap the procyclicality of banking and financial institutions. Furthermore, Basel III is unable to prevent the creation of risky and complex financial innovations. The capital ratios introduced by Basel I and Basel II stimulated the banks to engage in riskier activities such as derivatives and off-balance sheet operations. The risk was not diminished; it was just shifted from the regulated banking system to a shadow banking system. There is no guarantee that Basel III and Dodd-Frank will avoid the creation of "shadow banking system", where the risk could be transferred to. If current regulatory efforts are intended to minimize or prevent future occurrence of financial crisis and ensure a steady economic growth, authorities must take a holistic approach and address the prevalent risks throughout the financial system (Levy Report, 2011, p. 10).

Systemic risk is an important issue when dealing with financial firms (and off course for the regulators also), but it is not addressed comprehensively in Basel III, since it still focuses on an individual institution's risk. Main stream financial institutes including Basel still consider the self-regulation as the best decision framework for banks. Olivier Blanchard has been quite vocal in expressing that financial regulation taking in to account only individual financial institutions must consider the financial institutions operating in the global shadow banking system. Although these were not regulated in pre-crisis period but authorities have rescued these institutions too due to their broader implications for the systemic risk. To Minsky, regulation must dynamic in nature to be constantly adapted to innovations and new operations of financial institutions, in order to reduce instability (Wray, 2008).

It seems that perhaps the 2007 GFC has not proved an enough shock to induce a major change in the contemporary financial arrangements and the necessary heterodox reforms are reserved to another new and inevitable financial crisis. Concerns lie in the implementation of Basel III because it does not have the force of law. It is just guidance for the participating countries and may be temporary, as it is only a test, from January 1, 2013 to January 1, 2017. On the basis of our analysis, it can be argued that the Dodd Frank Act and Basel III would not be able to insulate financial system from the occurrence of events like of 2007; instead they only ensure that banks have enough capital when they fail. It simply leads us to conclude that Basel III is not a proactive type of regulation. Dodd-Frank Act and Basel III has serious implications for EMEs, this issue is debated at length in the following.

2.4. Implications of International Regulatory Reforms for EMEs

Emerging markets have different challenges and priorities as compared to their advanced economies counterparts. These economies are different in terms of the health of their banking systems, the degree of development of their capital and financial markets, and their specific financial needs according to their targets of economic growth and development. The thrust of the reforms has been designed keeping in view financial system of Europe and the US. There for, it is most likely that any regulatory changes aimed to curb problems in the AEs financial markets turned out inappropriate for EMEs where off course starting positions and dynamics are different. Nonetheless, EMEs will be affected either directly via local implementation of these reforms or indirectly as international banks in AEs would change their business models in a compliance to the new regulatory landscape. Implications of various reforms have been analyzed in the following.

2.4.1. Implications of Basel III Regulatory Reforms for EMEs

The Basel Committee on Banking Supervision (BCBS) announced Basel III proposals on December 2010. Majority of the EMEs has serious reservations about these newly introduced Basel III Regulatory rules. Their stance is that Basel rules on liquidity, counterparty risk and trade finance will reduce the supply and thus cost of credit would surge in these economies. The impact and trade-offs of the Basel regulatory rules and reforms may vary among EMEs but we have discussed the issues keeping in view the general consequences. According to the B-20 report, EMEs would be affected by the following three channels if the Basel III proposals are implemented (B-20 Repot; 2012, p. 8) [59]

1. *By increasing cost of finance*
2. *By significant global deleveraging*
3. *By a fragmentation of the international banking model*

It was observed during 2007 that inadequate liquidity was one of the prime causes of the banking institutions difficulties in the AEs. The Basel III liquidity regime introduced in the post crisis period is heavily tilted toward the advanced economies financial markets. These rules have two important measures. The Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR); both of these rules are designed to prevent the bank failures like experienced during the 2007 financial crisis. These newly introduced changes about liquidity levels are aim to have a powerful impact on the both AEs and EMEs, although final impact of both these rules would not necessarily be the same. Keeping in view their own peculiar financial history and the experience of handling various crises in the past decades, most of the EMEs had already established robust regulatory regimes for liquidity. In the new Basel III liquidity rules, there is a lack of clarity about how the Basel III regime will work in the EMEs as some of these economies operate in a relatively different banking models as compared to their advanced economy counter parts. The Basel III liquidity requirement under the LCR

[59] The "Business-20" (B20) is an international forum aimed at fostering dialogue between governments and the global business community.

poses particular problems for the less developed banking and financial markets of some EMEs. Generally, EMEs sovereign debt issues are quite less than the advanced economies and even some of these economies lack the enough levels of sovereign debt in issue which will enable the EMEs banks to meet the buffer requirements of the new Basel rules. Besides this direct impact of the higher liquidity ratios, EMEs bank would face powerful indirect impact from this new regulation which will change the banking business model in the USA and European Union. These new rules will affect the much needed infrastructure development projects in the emerging markets. Another important issue is about the infrastructure financing projects in EMEs. Several EMEs have substantial demand for infrastructure development finance and the international financial institutions particularly play an important role by providing finance to the large scale infrastructure projects in EMEs. After adopting the newly stricter rules it is likely that the high liquidity requirements will make project finance a less attractive proposition for the advanced economies banks. The NSFR rule of EU particularly means that it will be more costly to initiate project finance in the EMEs, even when debt would be restructured subsequently. The NSFR requires banks to match their long-term obligations with long-term funding thus increasing the cost of liabilities to fund infrastructure finance (B-20 Report, 2012) (See in the Annexure 9: A Snapshot of Some Key Consequences of New Rules).

International capital inflows have traditionally played a vital role in economic growth of the EMEs over the years. New rules have significant negative impact on the GDP growth of EMEs; the World Bank estimates that an increase in capital ratios in advanced economies of 2% could reduce GDP growth by 0.3% in EMES with large banking inflows. After adopting the new liquidity requirements, international banks are being forced to make choices about the allocation of capital between the countries and activities. Thus, there is danger that mandatory

requirement for higher capital requirements in the 'home' markets of advanced economy banks leads to a reduction in capital allocation to EMEs. Deleveraging and asset sales for banks of the advanced economies come at the expense of non-core markets which are essentially the emerging markets (B-20 Report, 2012).

Basel III has serious repercussions for economic growth in EMEs (see the table 4.3 below) and global growth, while continued economic growth of EMEs is vital also for the global economic turnaround. According to the research of BBVA (A Spanish bank with a large presence in the developing world) a 20% increase in capital stocks and liquidity reserves would cut per capita GDP by 2% globally and by 3% in the emerging markets. In the same vain, another study shows that implementing Basel III would hamper growth by more than 3 percentage points, and that the recovery period from the shock requires 3 years and 3 quarters (Baki, 2012). An empirical study have shown that the impact of Basel III on a sample of 47 emerging economies reaps different results; advanced EMEs are the most adversely impacted in comparison to secondary and frontier emerging markets; secondary EMEs are the least impacted and the fastest to recover from the shock since their banking sectors are adequately prepared to meet capital adequacy requirements (Claessens, 2010).

Table 4.3 : Effect on the GDP per capita of a 1% increase in the following variables

	TOTAL		**EMEs**	
	Low Interval	High Interval	Low Interval	High Interval
Bank capital to assets ratio	-0.02	-0.08	-0.04	-0.13
Bank liquid reserves to bank assets ratio	-0.10	-0.02	-0.01	-0.02
Capital and liquid reserves	-0.30	-0.10	-0.04	-0.15
Source: B-20 Report				

Trade finance is extremely important for the economic growth of EMEs and thus very critical for the global growth as well. Structural reforms and other regulatory restrictions to cross-border activity of the advanced economies banks are obstructing the financing international trade and investment flows to EMEs. Globally, trade finance supports $14-16 trillion of trade annually. An important instrument for international trade is the Letter of credit which used extensively by EMEs as compared to AEs. Majority of the small and medium enterprises and even larger companies of EMEs use LC in their routine exports and imports. Over 55% of all the LCS is used for exports from Asia, Africa, the Middle East, Central and Latin America and this higher number established the importance of trade finance as an important source of credit for the growth of EMEs Trade finance is considered a safe and profitable form of financing and the new regulatory standards of Basel III three have a huge potential to have negative impact on the availability of trade finance to EMEs. International Chamber of Commerce in its 2011 annual report has established that trade finance is less risky as compared to other financial assets so it treated by different set of regulation. Furthermore, strict rules about trade finance can lead unregulated shadow banking practices (FCIC Report, 2011).

EMEs believe that Basel III has ignored their peculiar needs, although it was meant to produce globally relevant standards governing the financial soundness of banks. Predominantly, the agreement aimed at advanced economies banks. Rules for their investment portfolios are irrelevant to the EMEs banking sector which is not much advanced and involves in the traditional business activities deposits and loans. EMEs bank capital often consists of equity and reserves and not much else, and Tier 1 capital ratios are already high with this composition of assets. As discussed above, these rules and ban on some particular financial products can result in dissuading investment bankers to peddle in EMEs financial markets.

Some less mature EMEs are suffering from fragile financial market infrastructures, weak legal systems, mediocre accounting standards, and a dominance of public enterprises. Hence, the one-size-fit-all policies will result in nothing but the augmentation of already under developed financial infrastructure of these EMEs (Beck *et al*., 2006). The true peril is that some of the EMEs will adapt and implement Basel III in their own ways, defying the purpose of standardization (Baki, 2012, p. 17).

Due to capacity constraints, weak institutions and lack of skills in EMEs even some of the formidable reforms are difficult to implement in those areas where reforms are very relevant and seems obligatory. Basel III requires the sophisticated new stress testing rules that go far beyond the risk management capabilities of EMEs banks. Besides all these issues, Basel III poses two more fundamental challenges for the EMEs. The first concerns the deadlines about implementation of the accord. Aimed at the fears of banking industry that Basel III's requirement to raise more capital could choke off nascent economic recovery the implementation of Basel III is stretched until the end of this decade. EMEs need to operate on a different timetable; they have rebounded from the global recession quickly as compared to advanced economies. Enhanced capital and liquidity standards would have had beneficial counter-cyclical effects but the Basel III's transition period means that no EMEs is likely to want to be the first to implement it leaving its bankers at disadvantageous position relative to their advanced economies competitors.

The second challenge is whether it makes sense for EMES banks to be more capitalized and liquid than those in AEs? It was a common practice in past that EMEs banks needed higher capital and liquidity buffers, because of their more volatile operating environment. Rise in Tier 1 will raise the capital ratios; EMEs would ratchet up their own requirements just to

maintain an emerging market premium? This is really important issue because both the EMES and AEs have different risk appetites due to their own peculiar economic objectives. Advanced economies goal is to avoid a repeat of the crisis; on the contrary EMEs are targeting more economic growth. Newly introduced regulations by the Basel III would make their banks stronger and more stable, but at the risk of lowering growth (Taylor Michael, Financial Times, 2010). Financial industry analysts believe that the "liquidity coverage ratio" required by the reforms is particularly very difficult for EMEs as this requires banks to hold assets that are easy to sell in the event of a market crisis. Another drawback is that Western banks can hedge their risk by buying credit default swaps but this option is not available to the most of the EMEs due to their under developed capital market (B-20 Report, 2012)

2.4.2. Impact of Extra-Territorial Financial Legislation on EMEs

Three significant regulatory frameworks and legislation haze been introduced internationally so far. These Dodd-Frank Act in the USA, European Markets Infrastructure Regulation (EMIR) at European level and BASEL III Banks Regulatory requirements at the global level we have discussed the impact of BASEL III in the previous pages. In the following we have elaborated by examples that how extra-territorial legislation present particular challenges for emerging markets.

2.4.2.1. Swap Dealer Registration under the Dodd-Frank Act

Dodd-Frank Act makes it obligatory that all swaps deals with the US firms and banks must be transacted by a dealer that is registered and regulated by the Securities and Exchanges Commission (SEC) and Commodity Future Trading Commission (CFTC) of the United States. This requires the foreign banks to get register as a swap dealer with CFTC before it can do business with US companies and banks. Now, the most likely choice of entity registration for the foreign bank would be its home country head office where the global

swaps businesses are managed. Thus the Dodd Frank, the SEC and CFTC would have regulatory oversight over the foreign bank home country entity ceasing the regulatory capture of the home supervisors. It can results in duplicative, inconsistent and contradictory regulatory requirements creating strains between the regulators (the US and the home country). This issue is very critical because US banks constitute a larger share of the international market making community. In this situation banks from EMEs are in a difficult situation leading them to either have to stop trading with US banks which off course restrain market liquidity in EMEs(such as foreign exchange) or these EMEs banks have to follow the US regulation even in their home country (B-20 Report, 2012).

2.4.2.2. European Markets Infrastructure Regulation

EMIR is the European Union legislation requiring that all eligible OTC products to be transacted by firms registered only within the European Union. This simply means that EMIR requirements are applied on any party regardless of whether it is based in EU or not. This makes it obligatory for non-European dealers to clear his contract under a EU recognized clearing house. Furthermore, dealer has to get clearance from home country clearing house also because a home country clearing house is not be recognized as an EU approved clearing house. Therefore EMEs trading with the EU may face multiple or sometimes conflicting sets of EU and home country regulations on clearing, margin requirements and trade reporting. These aforementioned extra-territorial legislations thus collectively may lead to increased borrowing costs for EMEs governments, deeply squeezing market liquidity of EMES which ultimately lead the sovereign bonds markets of EMEs volatile.

To sum up discussion, it can be argued that the consequences and implications discussed above shows that the Basel committee needs to offer an alternative standard tailored according to the particular needs of EMEs

Section 3: Macroprudential Approach to Financial Regulation

"We need a new set of macro-prudential policy tools which will enable the authorities more directly to influence the supply of credit […]. These tools are needed because credit/asset price cycles can be key drivers of macroeconomic volatility and potential financial instability", **A. Turner (2010)**

Macroprudential regulation has been widely discussed and broadly agreed after the 2007 financial crisis (Liebeg and Posch, 2011). The ongoing deliberations of regulatory reforms in the United States, European Union and in the EMEs have duly underscored this view (Hirtle et al., 2009). This section of the chapter aims to highlight the role of macroprudential regulatory policy in dealing with financial crisis (BIS Papers No 60, p. 58). Crisis has established that a purely microprudential perspective on regulation is futile to maintain a stable financial system and therefore calls for a macroprudential perspective that evaluates and responds to the financial system as a whole.

Macroprudential regulation and supervision entails two key components: firstly, it aims to reduce the buildup of systemic risks and to have market participants internalize such risks (i.e. incorporate them in their decisions) as much as possible. Secondly, it targets to strengthen the financial system's resilience to adverse shocks and economic downturns; therefore it helps to reduce the social costs of systemic risk materializations (Bank of England, 2009; CGFS, 2010b; Clement, 2010; Galati and Moessner, 2011). According to Bernanke, "a macroprudential approach would complement and build on the current regulatory and supervisory structure which focus the safety and soundness of individual institutions and markets" (Bernanke; 2009). Claudio Borio of the BIS has paraphrased in Milton Friedman's fashion and said "*We are all macroprudentialists now*". BIS economists have long been

advocating this approach since 1990s and some of the early and important contributions to this debate include several quantitative studies conducted by the BIS on the costs and benefits of adopting the new regulatory standards of Basel III (Angelini et al., 2011a; Mag, 2010a and 2010b), and in other policy institutions (Bean et al., 2010; Roger and Vlcek, 2011; and Angelini et al., 2011b). We have attempted to highlight the importance of macroprudential approach of regulation in the following.

3.1. Propositions (Proposals) about Macroprudential Policy

Severity and enormity of systemic risk in the run-up of the 2007 financial meltdown clearly refute the prevalent belief that financial markets are always efficient and self-regulating (BIS Papers No 60, 2011). In the post crisis 2007 period, several initiatives were taken by various institutions and renowned organizations to highlight the importance of a more comprehensive approach towards regulation that has macroprudential orientation. We have briefly outlined some of the proposals by various thinks tanks and organizations about the efficacy of macro prudential orientation of regulation.

The G20 working group co- chaired by Tiff Macklem (Canadian MOF) and Rakesh Mohan[60] (the Deputy Governor of the Reserve Bank of India) was formed in January 2009 and assigned the task of enhancing the soundness of financial regulation. The group recommended macroprudential governance and tools. On the basis of this work, The G20 Communiqué of London Summit has proposed a compromise between the light-touch regulatory approach of Anglo-Saxon model and relatively heavy-handed view of the French-German regulatory models. The International Center for Monetary and Banking Studies and the Centre for

[60] Rakesh Mohan (2009), "Emerging contours of financial regulation: challenges and dynamics", Banque de France, *Financial Stability Review,* No. 13.

Economic Policy Research[61] team prepared the eleventh Geneva Report "*The Fundamental Principles of Financial Regulation"* published in June 2009 calls for a macroprudential orientation towards financial regulation. The Bank of England (2009) has published a very important discussion paper titled as "*The role of macroprudential policy: A discussion paper''* in November 2009 proposing this approach. Furthermore, the Warwick Commission on International Financial Reform (2009) published a report in December 2009 to highlight the significance of macro perspective of regulation and supervision. The report of The Basel Committee on Banking Supervision (BCBS) and Bank of International Settlements (BIS) has strongly encouraged taking a more macroprudential approach to regulation. G-30 established its working group on macroprudential policy in February 2010. This group defined the aim of macro prudential policy as "to enhance the resilience of the financial system and to dampen systemic risks that arise and propagate internally in the financial system through the interconnectedness of institutions by virtue of common exposure to shocks and the tendency of financial institutions to act in pro-cyclical ways that magnify the extremes of the financial cycle" (G-30 Report, 2010, p. 7). G-30 report has also identified the macroprudential tools and underscored the need to implement a macroprudential policy globally keeping in view the specific country characteristics, financial, and cultural differences.

G-20 published a Report in March 2011" "Macroprudential Policy Tools and Frameworks" that highlight the "*8 Macroprudential Principles*". Lastly, it is pertinent to mention the newly enacted Basel III is macroprudential in spirit. At the core of Basel III is the change from fixed minimum capital requirement to one that varies with the state of the economy, a countercyclical capital rule that intends to deal with procyclicality[62] of the banking system

[61] Including Markus Brunnermeier, Andrew Crockett, Charles Goodhart, Avinash Persaud and Hyun Shin.

[62]After the 2007 GFC, there have been calls to reduce the procyclical aspects of existing regulations i.e. the tendency of accounting rules and capital requirements to aggravate both financial retrenchments during a slowdown and financial excesses during a boom. Procyclicality is explained as "the banking sector tends to

(Agrawal, 2010). Thus Basel III represents a big step forward in its adoption of macroprudential overlays in regulation. Measures like Leverage Ratio and buildup of capital buffers are in the spirit of macroprudential approach.[63]

3.2. History and Concept of Macroprudential Approach

Macroprudential is not a new term, in fact, the idea macroprudential dates back to 1970s. Public documents references to macroprudential policy however surfaced only in the mid-1980s. Clement (2010) has documented the origin of the term "*macroprudential*" and propounded that it can be traced back to unpublished documents (minutes of the Cooke Committee) prepared in the late 1970s and a document prepared by the Bank of England. In those times, the term was generally point towards a systemic orientation of regulation and supervision linked to the overall macroeconomy (Borio, 2009). BIS (1986) discussed macroprudential policy as a way support the "the safety and soundness of the financial system as a whole, as well as payments mechanism". During the late 80s, George Blunden, the first chairman of the Basel Committee on Banking Supervision, highlighted in a speech that how a systemic view could imply curbing banking practices that would appear to be prudent from an individual bank's perspective (Blunden, 1987).

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increase the impact of a business cycle by intensifying lending during economic booms and by imposing loan restrictions during economic downturns. During an economic boom (or a cyclical upswing), banks tend to be excessively optimistic about the economy and hence their customers' position. Banks advance loans against poorer collateral (possibly overrated due to asset price bubbles created during the cycle), reduce the applied risk premia and allocate less loan-loss reserves to cover expected risks. At the same time, there is usually an upsurge in banks' profitability during an economic boom. Subsequently, banks' procyclicality during an economic upturn contributes to rapid credit growth, the rise in collateral values; artificially low lending spreads, and a decline in loan-loss provisions. On the other hand, the opposite is true during an economic downturn. When business cycles trend down and the optimism exhibited during a cyclical upswing vanishes, formerly hidden shortcomings become suddenly visible. At such times, banks will typically behave in a way that further aggravates the situation – responding, for instance, with an excessive cutback in lending, which can result in a credit crunch, or setting up disproportionately large loss provisions, which can undermine their profitability and worsen their capital situation. In extreme scenarios, banks' procyclical behavior can even precipitate a system-wide banking crisis" (Gonzales,2009, p. 1).

[63] BIS research shows leverage ratio did the best job of differentiating banks that needed public support and those that did not.

In the early 2000s, the notion of a macroprudential approach received new impetus, particularly through an influential speech by Andrew Crockett, at the time General Manager of the BIS (Crockett, 2000) and elaborated in subsequent research (Borio, 2003). In those days, the usage of the term was already becoming more common (IMF, 2000) as described in Knight (2006), White (2006), and BIS (2008), until the current financial crisis gave it an extraordinary boost (Borio, 2009) and its usage become more common. Many recent speeches about the possible lessons from the 2007 crisis in terms of macroprudential policy are emphasized by the Shirakawa (2009), Nijathaworn (2009), Tumpel-Gugerell (2009), Bini-Smaghi (2009), Kohn (2009) and Brouwer (2010).

Although, a consensus about the definition and objectives of macroprudential regulation has not reached but the general aspects of this approach like; it addresses risks to the financial system as a whole and, in conjunction with microprudential regulation and supervision, is supposed to ensure financial stability (Liebeg and Posch, 2011, p. 63) are found repeatedly in literature. Thus "macro prudential" can be defined as "policy which focuses on the financial system as a whole. Besides this, macro prudential approach treats aggregate risk as endogenous (Davis and Karim, 2009, p. 2).

Claudio Borio (2009) has defined macro prudential policy as set of measures that focuses on the financial system as a whole, and it aims to limit system wide distress to avoid output loss associated with financial instability. Mishkin termed it as a policy that broadly constructed prudential supervision involves government regulation and the monitoring of the banking system to ensure safety and soundness (Mishkin, 2001, p. 1).

According to IMF, macroprudential policy aimed at mitigating systemic risk that has the potential to have serious negative consequences for the real economy (IMF et al., 2009). Malcolm D. Knight elaborates that macro prudential approach has two defining elements; firstly, it focus on the financial system "as a whole" as opposed to individual financial institutions approach. Secondly, macro prudential approaches emphasis on the dependency of aggregate risk on the collective behaviour of individual institutions, popularly known as "endogeneity of risk". A macroprudential angle acmes the fact that asset prices and the macroeconomy are themselves strongly affected by how financial institutions behave; on the contrary a microprudential orientation tends to take movements in asset prices as "exogenous" because micro prudential approach regard asset prices, market/credit conditions and economic activity as independent of their decisions (Borio, 2009). Furthermore Macroprudential incorporates both a "time series" and procyclical aspect i.e. evolution of aggregate risk over time and a "cross-section" aspect which concerns itself with interrelationships and common exposures among financial institutions (Longworth, 20100, p. 4).

3.3. Comparison between Micro and Macro Approaches

It is useful to distinguish between "*microprudential*" and *"macroprudential*" approaches to set the base for further discussion. Many observers have pointed about that contemporary regulatory framework has the biggest weakness of being microprudential (Crockett 2000; Borio, Furfine and Lowe, 2001; Borio, 2003; Kashyap and Stein 2004; Kashyap, Rajan and Stein 2008; Brunnermeier et al., 2009; Bank of England, 2009; French et al., 2010). A microprudential approach aimed at preventing the costly failure of *individual* financial institutions while on the contrast, a macroprudential approach seeks to safeguard *the financial system as a whole.* The macro and micro prudential perspectives differ in terms of objectives of the policy and the model used to describe risk are explained in the Annexure 10.

Bernanke (2008) states: *"going forward, a critical question for regulators and supervisors is what their appropriate 'field of vision' should be. Under our current system of safety-and-soundness regulation, supervisors often focus on the financial conditions of individual institutions in isolation. An alternative approach, which has been called system wide or macroprudential oversight, would broaden the mandate of regulators and supervisors to encompass consideration of potential systemic risks and weaknesses as well."* However Macroprudential policies must be perused moderately like any other polices. Crockett (2000) posits that a rigorous follow up of macroprudential approach can result into undesirable consequences also. Sometimes, overemphasis on the soundness of individual institutions may result in excessive protection. This overly protected environment can weak the market discipline and its allocative mechanism. However, soundness of individual institutions is neither a necessary nor sufficient condition for the stability of the financial system as a whole (see the Annexure 10: Differences between Macroprudential and Microprudential)

3.4. Rationale and Objectives of the Macroprudential Approach

The traditional approach of financial regulation which has focused on the task of ensuring the soundness of individual financial institutions has proved futile. To be effective, a macroprudential policy framework would address excessive asset growth and fragility of bank liability (Hahm et al., 2012, p. 21). *"Microprudential base policymakers are adding a macroprudential overlay to address systemic risk. This overlay has two important dimensions. First, it seeks to ensure the stability of the financial system over time […]. And second, the macroprudential overlay addresses the stability of the financial system at each point in time"* (Deputy General Manager of the BIS, Herve Hannoun, 2010).

Brunnermeier et al. (2009) posit that that key purpose of macro-regulation is to act as a countervailing force which can be instrumental to reduce measured risks in a boom and subsequent an increase in measured risks in the wake of bust. Landau (2009) has argued that circumventing the financial or asset bubbles can be the possible mandate for macroprudential supervision. Borio and Drehmann, 2009 gave an alternative view and according to them goal of macroprudential policy is to contain the system wide risks which obviously have significant macroeconomic costs. Bank of England (2009) has described in a more general term that Macroprudential policy should aim to ensure stable provision of financial intermediation services (payment services, credit intermediation and insurance against risk) to the economy. In this aim, Macroprudential policy aid to avoid the booms and busts cycles in the supply of credit and liquidity.

Caruana (2010) has pronounced that basic objective of objective of macroprudential policy is to reduce systemic risk by explicitly addressing the interlinkages between the all financial institutions, and the procyclicality of the financial system and reducing the common exposure of all institutions together (Caruana, 2010). To discourage individual bank strategies that cause a systemic risk is another objective of macroprudential policy (Perotti and Suarez, 2009). Hanson et al (2010) make the point from the observation that microprudential regulation aims at forcing banks to internalize losses on their assets in an attempt to protect deposit insurance funds and mitigating moral hazard. Accordingly they have differentiated the credit crunches and fire-sales of assets as primary costs of balance sheet shrinkage and emphasize the broader the perimeter of macroprudential regulation beyond the deposit-taking institutions. The most important factors are briefly elaborated here.

3.4.1. Nature of Financial Instability

Due to the costs and nature of financial instability, it is utmost important for regulators and authorities to strengthen the macroprudential orientation of their regulatory and supervisory frameworks. It requires the regulators to look beyond the narrow objective of depositor protection and focus on more broader and big objective of systemic stability concerns. It is imperative because financial instability impairs the basic tasks of the financial system and misalignments of asset prices can hamper the saving and consumption decisions and can result in misallocation of resources throughout the economy. Besides these indirect costs, the direct costs of financial instability are much more enormous. According to an IMF estimates, the *direct* costs of financial instability emanating from the bank failures can higher than 10% of GDP. In the same vain the output costs of financial instability can be huge and despite measurement difficulties, some studies have indicated that the costs of banking crises can easily run in the double digits of GDP (Hoggarth and Saporta, 2001). Fiscal costs of financial instability both from advanced and emerging countries are highlighted in the table 4.4 below.

Table 4.4 : Fiscal Costs of Financial Instability

Country	Period	Fiscal Cost as % of GDP	Country	Period	Fiscal Cost as % of GDP
United States	1984-91	3.2	Mexico	1994-95	18.0
Japan	1991-99	24.5	Brazil	1994-95	10.0
Venezuela	1994-95	7.5	Korea	1997-98	19.5
Norway	1987-89	6.4	Malaysia	1997-98	34.5
Finland	1991-93	13.5	Indonesia	1997-98	34.5
Argentina	1980-82	55.3	Chile	1981-83	4.0
Source: Crokett (1997), MaFarlance(1999) and The World Bank (1999)					

According to Crockett (2000), "the distinction between the micro and macroprudential dimensions of financial stability is best drawn in terms of the objective of the tasks and of the conception of the mechanisms influencing economic outcomes. It has less to do with the instruments used in the pursuit of those objectives. The macroprudential objective can be defined as limiting the costs to the economy from financial distress, including those that arise

from any moral hazard induced by the policies pursued. One could think of this objective as limiting the likelihood of the failure, and corresponding costs, of significant portions of the financial system. This is often loosely referred to as limiting "systemic risk ". In contrast, the microprudential objective can be seen as limiting the likelihood of failure of individual institutions (Crockett, 2000, p. 2).

Borio (2003) has also debated the subject in detail and argued that due to nature of financial instability, microprudential approach alone cannot warrant a stable and sound financial system and the GFC of 2007 has endorsed this argument. Microprudential approach is good only to deal crisis emanating from an individual institution and subsequently through the balance sheet interconnections spread to other institutions. But historical experience showed us that, more costly episodes of widespread financial distress have arisen primarily through common exposures to macroeconomic risk factors across institutions. In this situation several institutions are at risk and got vulnerable simultaneously and so highlight the reinforcing interaction between the financial system and the real economy. Thus overextended financial system with hidden risk, rising assets prices and increased leverage feed the economic growth. When system lacks the safety cushions it supposed to build in good times, wide spread financial strains are inevitable reflecting the procyclicality" of the financial system (Borio et al. 2001; BIS; 2001, 2002).

3.4.2. Better Balance between Market and Regulatory Discipline

Strengthening the macroprudential approach assures a better balance between market and official discipline leading towards a better economic performance. If the objective of supervisors and regulation is to prevent the failure of each and all the institutions for which they are responsible, regardless of its system-wide connectivity and consequences, then there is risk is that the regulatory net becomes overly intrusive and excessively protective. As

Borio has argued that if micro focused approach of regulation failed, it has serious consequences, "any failure, no matter how unimportant for the economy, could seriously damage the reputation of supervisors. The risk is that market forces may be stifled excessively. Resources can be misallocated and growth opportunities foregone. If taken too far, and underpinned by overly generous safety net arrangements, a micro-prudential approach could even undermine the very objective it is supposed to attain" (Borio, 2002, p.6). Distorted and numbed incentives to monitor and limit the risks can ultimately lead to costly instability, the so-called moral hazard problem (Santos, 2000; De Bandt and Hartman, 2000)
But a macroprudential approach warrants a monitoring of the whole system instead of mere focusing some big or systemically interconnected institutions and requires the regulators to look beyond limiting the likelihood of failure of individual institutions (Crockett, 2000).

The 2007 GFC serves as a very apt example to manifest the inadequacy of micro approach of the financial regulation and supervision because Fed was more concerned about the safety of the individual intuitions and this regulatory approach of focusing on individual institutions failed very miserably. Bernanke (2007) admit that "what I did not recognize was the extent to which the system had flaws and weaknesses in it that were going to amplify the initial shock from subprime and make it into a much bigger crisis,"(Chan, New York Times, 2 September 2010).

3.4.3. Structural Evolution of the Financial System

Constant evolution and the structural changes in the characteristics of the financial system have put a further premium on the macroprudential perspective of regulation. As an obvious motivation it is evident that liberalized financial markets have proven more vulnerable to the occasional episode of excessive procyclicality of the financial system (Borio and White; 2004). There exists a consistent empirical evidence to corroborate the view that the

procyclicality of the financial system can be at the root of financial instability and that measures of risk behave as if risk declined during the upswing phase and rose only close to the peak or as the downswing set in (Borio *et al.*, 2001, p. 11). The procyclicality of credit and asset prices can be observed in the strained US banking system in the early 1990s, the serious difficulties faced by the Japanese economy following the banking crisis. More generally, the recent record of financial crises, especially those in Latin America and Asia in the 1990s, amplified by boom and bust movements in international capital flows, has been interpreted as providing evidence of a sizable causal role of financial factors.

Over the time major advancements in the financial market participant's ability to price and trade risks separately have made it easy to not only shift risks across different types of financial institution as well as between institutions. This environment made a strong case to take a holistic approach to the identification of vulnerabilities and risk and the calibration of prudential instruments (Knight, 2004). Counterweighting the powerful procyclical forces in the financial system is very important task for the supervisors and regulators. This requires the financial institutions to build up cushions in the in upswings so as to be relied upon in the events of bad times. Indeed these cushions would strengthen the ability of institutions to weather deteriorating economic conditions, when access to external financing becomes more costly and constrained. Furthermore by leaning against the wind[64], the amplitude of the financial cycle can be reduced and limit the initial risk of a financial distress (Borio, 2003). Countercyclical regulation is an important tool to counteract the cyclical forces in the financial system. Countercyclical macro prudential rules allow the regulators to mitigate the risks of asset price inflation while at the same time safeguarding the financial stability and

[64]That means an activist, countercyclical monetary policy. Central bank uses monetary policy to counteract the expansionary phase of the business cycle. Intention is to tighten policy in a way to restrain the credit cycle on the upside, with a view to mitigating the magnitude of the subsequent downturn. (William R. White, "Should Monetary Policy "Lean or Clean"" Federal Reserve Bank of Dallas Globalization and Monetary Policy Institute, Working Paper No 34 , August 2009).

recovery in the real economy. IMF study suggests that binding countercyclical prudential regulations can help reduce the output fluctuations and lessen the risk of financial instability. Furthermore, the countercyclical regulation can help to stem the swings in asset prices; it supports to lean against a financial accelerator process and thereby decreases the risks of macroeconomic and financial instability (N'Diaye, 2009, p. 2).

3.5. Macroprudential Tools/Instruments and Their Effectiveness

Macroprudential instruments are broadly defined as the set of measures that aim to monitor, prevent, and address system-wide risks, and minimize the cost of systemic crisis (IMF; 2011). These tools are set up with a macro lens aiming the system-wide or systemic perspective to support financial stability (Blanchard et al., 2010; Borio, 2009). To be effective, macroprudential policy needs a coherent institutional framework for effective surveillance, policy design and implementation. Macroprudential policy must deploy a range of tools to address aggregate weakness and individual failures. Because a single tool is unlikely to be sufficient to address the various sources of systemic risk, the macroprudential authority must be able to tailor specific macroprudential instruments to the particular vulnerabilities identified by its analysis (Lim *et al.*, 2011).

According to IMF, there are various tools developed or have been recently used to address the issues like buildup of aggregate risks over time. These can be dynamic provisions, loan-to-value ratio, and variation in sectoral risk weights measures targeted at foreign currency lending and liquidity requirements (IMF, 2011). Dynamic capital buffer qualify as an important example of such tools. There tools are particularly effective to target the countercyclical vulnerabilities. EMEs have been long using this tool to curb the boom-bust credit cycles. Another macroprudential tool is the loan-to-value ratios used for home mortgages. Turkey e.g. has used 'variation *in sectoral risk weights" measure to* curtail high

loan growth in the new lending to households (Jácome and Nier, 2012). Korea has recently (during the 2007 GFC) introduced higher Liquidity requirements in its financial sector.

Although, the 2007 GFC has initiated a policy debates, research and task forces on macroprudential policy, but there is no consensus about the effective set instruments/tools. Therefore, no standard taxonomy about macroprudential instruments is available so far (Galati and Moessner, 2011). The literature has highlighted several important distinctions between the different types of tools. Charles Goodhart has advocated the rule-based macroprudential tools – e.g. automatic stabilizers (Goodhart, 2004). Thus macroprudential tools can be divided between those which are primarily intended to mitigate the procyclicality of the financial system (these are geared towards addressing the time-series dimension of financial stability) and those oriented to reduce the risk of the common exposures that arise owing to balance sheet interlinkages at a given point in time. This important set of tool that focuses on how risk is distributed at a point in time within the financial system/contributions to systemic risk of individual institutions is commonly known as the cross-sectional dimension. The time series dimension captures the procyclicality of risk (BIS, 2001; Borio et al., 2001; Borio and Zhu, 2008; Brunnermeier et al, 2009, Brunnermeier, Markus and Pedersen, 2009; Shin, 2009).

Essentially, literature is rich on the analysis of the cross-sectional dimension and studies about systemic aspects of risk management (Hellwig, 1995) or theories of systemic risk (Acharya, 2009) are profound. Aspects like market failures (see Rabin, 1998; Calomiris, 2009) and propagation channels (Jensen, 1986; Calomiris and Khan, 1991) are dealt in detail in these aforementioned studies on the macroprudential approach. Some common examples of in rules-based prudential measures can be the countercyclical capital and provisioning

requirements and maximum loan-to-value ratios. These measures can be administered by loan loss provisions, ensuring capital requirements/capital surcharges, or loan-to-value ratios. These tools are discussed in literature and are practiced by the various central banks around the globe. Another very important "built-in stabilizer" is risk management practices that financial institutions internalize to gauge the risks associated with the buildup of financial imbalances and their subsequent unwinding (Borio and Shim, 2007).

Hanson et al have discussed a set of 35 tools that can be helpful in implementing a macroprudential approach (Hanson, Kashyap and Stein, 2010, p. 6). Interestingly most of the macroprudential instruments can be use countercyclically and due to spillover effects these countercyclical measures are able to reduce the balance sheet interlinked exposures. Nonetheless, practices of various central banks shows that non-conventional tools (Bernanke and Reinhart, 2004; Gertler and Karadi, 2010; Cúrdia and Woodford, 2009; Lenza and Reichlin, 2010) of the macroprudential approach are usually used in an extreme situation where policy rates are close to the zero bound. In this regard, the BIS have used a classification (taxonomy of macroprudential tools) which broadly links the macroprudential measures with microprudential categories (See in the Annexure 11: Macroprudential Instruments).

Now let's briefly discuss the effectiveness of some important macroprudential tools. There is scarcity of empirical research about the effectiveness of macroprudential tools employed which can guide to design of macroprudential tools going forward (Turner, 2010). Borio and Shim (2007) has provided a compilation of authorities' assessments of the effectiveness of macroprudential tools in different countries. It is observed in Spain during the 2007 financial crisis that provisioning has a small impact on credit growth; however build up

provisioning is useful as countercyclical buffers that help strengthen the solvency of banks (Caruana, 2005; Saurina, 2009). Nonetheless provisions have enhanced the resilience of both individual banks and the banking system as a whole. Fillat and Montoriol-Garriga (2010) have investigated the hypothetical need for US government's Troubled Asset Relief Program (TARP) funds for commercial banks if they had followed the Spanish dynamic provisioning system. Their findings suggest that about half of these banks would not have needed TARP support actually. Keys *et al*. (2009) posits that in US states with more stringent laws on mortgage brokers, securitization led to loosen lending standards. Nadauld and Sherlund (2009) believe that raising capital requirements might limit the growth of a bubble (BIS, 2011, pp. 21-22) (see the Annexure 11 for explanation of Macro Prudential Instruments).

3.6. Macroprudential Regulation and Supervision for EMEs

We will briefly examine macroprudential policies in EMEs in the following. Due to their underdeveloped financial system and vulnerability to speculative and volatile capital inflows, challenge of EMEs are far more serious then the AEs (Particularly the "sudden stops" or reversals of capital inflows which have devastated these economies in the past). Debates about the effectiveness macroprudential policy acknowledge that prevention of crisis or economic boom and bust cycles may be too ambitious a goal, yet macroprudential policy can go a long way to insulate the financial system and economy from system wide failures in case such disruptions. The key objective of the macro measures are to increase the resilience of the financial system so that it can absorb losses and remain viable too. Following subsection highlights that how the GFC of 2007 has provided a rationale for macroprudential policies to help manage the economy and underscore the need to monitor systemic risks (Hahm *et al.*, 2012) in the EMEs.

Several EMEs of the Asia have greatly strengthened their financial systems (e.g. Malaysia and Thailand). Asian EMEs have reduced their foreign debt, improved their monetary policy and have enhanced their financial regulatory frameworks in the post Asian currency crisis 1997. However, these economies need to strengthen their macro prudential policy frameworks for the following reasons. Firstly, emerging Asia was not deeply exposed to the perils of the shadow banking system that plagued the financial stability in advanced economies. Several financial institutions in Asian EMEs are working outside the sphere of formal banking (e.g. real estate and credit cards companies). Secondly, Asian financial systems also show signs of procyclicality. Lastly Asian economies like other EMEs are subject to large and volatile international capital flows. All these three factors potentially can be the source of systemic risks; there for a macroprudential perspective of the regulation is highly desirable.

EMEs of Latin American region have also upgraded their macroprudential policy frameworks over the years. This is not surprising that banking sector of these economies remained resilient to the global meltdown of 2007. Although Latin American EMEs like their Asian counterparts have long tradition of using macroprudential tools, but most of these economies lack the proper institutional set up to execute these rules more effectively. In this vain Chile, Mexico, and Uruguay have created financial stability councils in the post GFC of 2007 period. These councils have explicit mandate to monitor the systemic risks to the system and can make recommendations to use macroprudential policy tools to mitigate these risks (Jácome *et al.,* 2012) (see Annexure: 12 Macroprudential Policy Tools in Selected Latin American Countries).

The 2007 GFC has taught an important lesson that regulatory authorities even at the heart of most developed financial markets (USA and Europe) were completely failed to assess the

vulnerability of their financial system to withstand systemic shocks and their own skill and ability to act and react. Regulatory authorities of advanced economies traditionally have relied on "bottom-up" approach. According to this approach, authorities apply microprudential regulation and supervision on individual firms (because of too-big-too fail, systemically interconnected institutions arguments). Now the 2007 GFC has clearly demonstrated that authorities need an opposite approach and here the objective of macroprudential regulation and supervision is to provide a "top-down" framework for identifying risks in the financial system as a whole. This will help the regulatory authorities to truly gauge the actual enormity of the risk associated. However some EMEs have performed well as compared to AEs despite the fact that most of EMEs were much behind the AEs in their skill about the macroprudential regulations. Nevertheless, keeping in view the experience of advanced economies, it is recommended that EMEs must pursue "top-down" frameworks (See Annexure 13: Top-Down Versus Bottom-Up Approaches)**.**

It is important to mention here that dynamics of crisis and related system wide risks are very different in EMEs as compared to their counter parts in AEs. Capital inflows (speculative) have been source of instability in many EMEs as they gradually integrated into global financial markets. So macroprudential approach in EMEs must have such orientation to deal with such vulnerabilities arising from hot money inflows. Caruana (2010) has rightly argued that financial regulatory policies are an essential part of the solution to instability and vulnerabilities and complex systemic risks but they alone are not enough until supported by other policies also. Especially for EMEs the macroprudential toolkit must include the measures to limit system wide currency mismatches resulting from the money inflows into EMEs as these mismatches have repercussions for domestic institutions. Limits on open foreign exchange positions of the financial institutions and constraints on the particular type

of foreign currency assets can be cited as examples of EMEs specific measures (Turner, 2009). Borio and Shim (2007) have very analytically documented that buildup of financial imbalances are generally accompanied by a growing share of net foreign currency financing while on the contrast, traditional market based regulations aimed to reduce the incentives for capital inflows (Mohanty and Scatigna , 2005; Ghosh et al., 2008). Another tool in literature is the imposition of "Pigouvian Tax" on international borrowing suggested by Korinek (2010). This measure required borrowers to internalize the costs associated with currency mismatches. In several Asian EMEs formal frameworks for the macroprudential regulation are not adopted yet, but the respective authorities have actively intervened in their respective financial systems in a macroprudential ways and the Asian experience of success shows that there is an urgent need to establish a full-fledged macroprudential supervisory framework that focuses on the systemic risks at the national level and the global level.

Macroeconomic orientation and macroprudential perspectives are not new and have always been among the classic toolkits of central banks for ensuring financial stability. Therefore it is not surprising that now it is generally agreed that monetary and macroprudential policies should play complementary roles in addressing systemic risks and to perform this function. EMEs need some mechanisms that could allow central bankers, financial regulators, and representatives of the finance ministry to share information about the buildup of systemic risks in the system. This will lead to adopt a coordinated policy by the authorities require the establishment of some council or a single entity at the national level in the EMEs.

EMEs have long experience of using macroprudential measures to manage credit cycles. Since the 1997 crisis, authorities in Asia have collectively enforced macro and microprudential regulations to supplement their monetary policy measures. In the post Asian

crisis era several affected EMEs like Malaysia, Thailand and Korea took measures in this regard and introduced some macro measures across the economic and financial system. One target area has often been to manage loan and credit extensions to the property market. Given the typically high profit margins from property credit and loans, policy rate adjustments have long been found to be insufficient to tackle strong credit expansions. The objective of these prudential measures has also been to prevent systemic risks for overall financial stability, as seen in the 1997 crisis (See Annexure 14: Asian Experience with Macroprudential Tools).

The table 4.5 below summarizes a number of macroprudential measures adopted by a range of EMEs in the years leading up to the crisis (IFF Report, 2011, p. 26):

TABLE 4.5: MACROPRUDENTIAL INSTRUMENTS: COUNTRY EXPERIENCE	
Background and Motivation	**Action – Macro prudential Tools Used**
CHILE (2008-2009)	
Chile's economic activity declined as a fall-out from 2007 GFC. To respond, authorities enacted measures to restore the flow of credit, especially to low income households and small and medium-sized enterprises.	**-LTV:** the maximum LTV ratio for covered bond-type mortgages raised from 75% to 100% for debtors with higher credit ratings (2009) -**Differentiated Reserve Requirements**: introduction of differentiated reserve requirements for foreign currency (2008)
KOREA (2002-2011)	
The Korean banking system was vulnerable to housing market booms. In the aftermath of the Asian crisis, expansive policies to stimulate the economy created a credit boom (in particular, credit cards), the bust of which came in 2003 and left policymakers with a desire for tougher regulation. Real house prices increased by 26% from 2001Q1 to 2003Q3. After stalling in 2004, price appreciation resumed in 2005 and recorded an increase of 14% between 2005Q1 and 2007Q1. But prices declined again due to the negative effect of the global financial crisis. Given the systemic impact of housing policies, both on consumer confidence and overall macroeconomic management, as well as the social welfare purposes, the Korean authorities tightly regulate the housing market. **The main aims are to:** 1. maintain positive but limited house price appreciation 2. maintain consumer confidence through housing market policies 3. support construction sector 4. provide for the housing needs 5. -more recently limit household debt	**LTV**: introduction of caps on LTV ratios in 2002. Since then, tightened 4 times and loosened once in accordance with property price fluctuations. -**DTI**: introduction of caps on debt-to-loan ratio in 2005. Since then, tightened 4 times and loosened 2 times in accordance with property price fluctuations. -**Loan-to-Deposit Ratio**: reduction in banks' loan-to-deposit ratio to 100% starting in 2014 (November 2009, the deadline was shortened to end-June 2012, in June 2011). -**Reserve Requirements**: increase in reserve requirements from 5% to 7% for demand deposits, money market deposit accounts, and other non-savings deposits (2006). Reduction in reserve requirement from 1% to 0% for long-term savings deposits (2006). The overall reserve requirements increased from 3% to 3.8% (November 2006). Also, the reserve requirement on demand deposits in foreign currency increased from 5% to 7% (2006). -**Other Instruments**: tax incentives, subsidized financing, government construction and purchases of unsold houses, direct support for the construction sector, and moral suasion on lenders.
2009-2011	
In the years leading up to the financial crisis, the Korean banking sector experienced a large build-up in short-term external debt. **The main motivations to take action were to:** 1. reduce short-term external debt and reduce capital flow volatility 2. to reduce wholesale financing 3. strengthen foreign currency liquidity	-**Off-balance-sheet Limits**: introduction of a ceiling on banks' foreign exchange forward positions (2010) and tightened further in 2011 -**Lending Ceiling**: limits set on foreign currency loans (2010) -**Liquidity**: use of stronger foreign currency liquidity standards (2009) -**Tax**: reintroduction of a withholding tax on foreign purchases of treasury and

standards in order to reduce maturity mismatches and improve the quality of liquid assets 4. prevent excessive foreign currency bank loans from turning into systemic risks	money stabilization bonds and of a macro prudential levy on banks' non-deposit foreign currency liabilities (2011) **-Restriction on investment in foreign currency denominated bonds**: introduction of restriction on domestic banks and other institutional investors onshore from investing in Kimchi bonds (foreign currency denominated bonds issued by Korean banks and corporate) that are intended to be converted into Korean won for domestic use (2011)
MALAYSIA (1990s)	
After increasing at a modest 3% per year in 1993-94, house prices accelerated to an annual growth rate of 13% in 1995-96. More striking, however, was the boom in the commercial real estate segment. Office rents rose by 50% between 1990 and 1996. Related, the growth in bank loans for non-residential property purchases far exceeded that in loans for residential property purchases. **The authorities took action to:** - limit banks' exposure to real estate to contain any deterioration in portfolio quality -prevent an asset price bubble	**LTV**: introduction of a maximum LTV ratio of 60% on real estate loans in 1995 (discontinued in 1998). -**Lending Ceiling**: introduction of a limit on property lending equal to 20% of a bank's portfolio in 1997 (discontinued in 1998) -**Reserve Requirements**: increase in the statutory reserve requirement from 8.5% to 11.5% in 1994, and again to 13.5% in 1996 (reversed to 8% in 1998)
2005	
The boom-bust in the 1990s left the market with a significant supply hangover, in particular at the high-end condo segment. There have also been considerable additions to supply at the lower-end as a consequence of mass building of housing units by government agencies. Residential mortgage credit growth gained speed starting in 2001, and house prices recorded an increase of 4 % in 2004, after an increase of about 1.6% per annum during 2000-03.The authorities took action to reduce the mortgage growth rate and property prices	**Risk Weight**: increase in risk weight for non-performing loans from 50% to 100% (2005)
2010	
Malaysia has emerged from the world recession with strong forward momentum. Forceful countercyclical policies sound balance sheets, and intraregional trade have primed the recovery. Under these circumstances, credit growth started accelerating due to strong demand for consumer loans and mortgages. The authorities took action to moderate the excessive investment and speculative activity in the residential property market	**-LTV:** introduction of 70% of LTV for the third house loan (2010)
MEXICO (Late 1990s and early 2000s)	
The 1994-1995 crisis had a strong impact on the economy and the banking sector. The government provided significant liquidity support to banking system to avoid a collapse.	**Maturity mismatch in foreign currency**: significant refinement of limits on maturity mismatch in foreign currency (1997)

Following the crisis, the sector was open to foreign investment, and after a few years foreign subsidiaries played a dominant role in the Mexican financial system. The authorities also introduced measures to limit the exposure to liquidity risks both in domestic and foreign currency.	-**Exposure Limits**: limits on interbank exposure set at 100% of a bank's Tier I capital (2001)
2010	
The Mexican financial system weathered the spill overs from the financial crisis relatively well, reflecting improvements in bank risk management and prudential oversight since the mid- 1990s, and the strong profitability, reserve and capital buffers of banks coming into the crisis. The authorities introduced measures to increase buffers of banks and reduce pro cyclicality of the banking system.	**Provisions**: introduction of forward-looking loan loss provisioning
THAILAND (2002-2011)	
The country saw rapid credit growth, double-digit rises in housing prices, and massive capital inflows in the first half of the 2000s. House prices have been declining since 2006, with the speed of decline accelerating in 2008. Yet, in 2010Q2, prices spiked, posting a 10% quarter-on-quarter increase and commercial bank loans grew strongly over the summer. The motivation to take actions were to: 1. -reduce the cyclicality of the real estate sector **2.** -reduce currency risk	**LTV**: introduction of a cap of 70% on the LTV ratio (2003); increase in the LTV ratio for high value mortgages (above 10 million baht) from 70% to 80% (2009) -**DTI**: introduction of caps on DTI (2004) -**NOP**: introduction of limits on net open currency positions (2002) -**Risk weight**: imposition of higher risk weight for high value mortgages (above 10 million baht) with LTV above 80% (2009); and higher risk weight for residential mortgages (less than 10 million baht) with LTV above 90% (2011)
TURKEY (2008-2009)	
The impact of the 2007 GFC manifested itself in Turkey through an FX liquidity squeeze. Banks responded to the liquidity squeeze by reducing their FX loans and holdings of Eurobonds. Important motivations for the authorities to take action were to: 1. strengthen and preserve the financial position of banks **2.** address the negative effect of the global financial crisis	**Caps on foreign currency lending:** moderation of FX lending by allowing non- FX earnings companies to obtain FX loans (2009) **-FX Liquidity**: change in FX liquidity ratio by allowing banks to temporarily classify FX loans as FX liquidity to help them meet FX liquidity adequacy ratios (2008). **-Restriction of Profit Distribution**: introduction of restrictions on profit distribution (2008)
INDIA (2004-2010)	
Financial institutions generally tend to behave in a pro-cyclical manner in their operations. Up until the global financial crisis, strong economic growth and urbanization started a real estate boom and credit to the private sector, including loans to households for housing and consumer credit. After the global crisis, credit started to decline. The authorities' main objective was to reduce pro cyclicality.	-**LTV**: introduction of 80% of LTVs for residential real estate (2010) -**Reserve requirements**: increase in cash reserve requirements from 4.5% to 5% (2004), 5.5% (2006), and then to 6% (2007) **-Risk weight**: increase in risk weight on housing loans from 50% to 75% (2005) and for commercial real estate exposure from 100% to 125% (2005), 150% (2006), and then to 100% (2008) -**Provisions**: an increase in general provisions from

	0.25% to 0.4% (2005), 1% (2006), and then to 2% (2007)
INDONESIA (2010-2011)	
The Indonesian economy experienced rapid growth with rising inflationary pressure, partly due to massive capital inflows from advanced economies. So the authorities took action to: -contain inflationary pressure -reduce vulnerability from capital inflows	**Reserve requirements:** the reserve requirement for local currency deposits was raised from 5% to 8% (2010) and, for foreign currency deposits, it was raised from 1% to 5% (2011) and then to 8% (later in 2011). The authorities introduced additional reserve requirement for banks with loan to deposit ratios below 78% or above 100 % (March, 2011).
Source : Lim et al., 2011, pp.73-81	

Nonetheless, the above cited EMEs learnt lessons from the past and particularly Asian policy makers has duly recognized the intricate links between macroeconomic performance and financial stability since the days of Asian currency and financial crisis of 1997. Financial and economic reforms were initiated in the pre-crisis(2007) decades in the several EMEs particularly, regulatory framework shave been up graded and supervisory policies have collectively encouraged and contributed to a much-healthier financial sector, and sound banking practices as compared to past (Siregar, 2011, p. 3). Annexure 14 provides a summary of various macroprudential measures in Asia. It shows that LTV ratios are the most commonly used policy measure in the region**.** However, it is emphasized here that even the best macroprudential policies alone cannot prevent all financial crisis because macroprudential policy does not operate in a vacuum, it must accompanied by the sound monetary and fiscal policies.

Conclusion

The 2007 GFC accentuates the lesson that financial regulation needs to be more dynamic taking into account the needs of evolutionary nature of capitalistic markets. Our analysis in the above pages indicates that a holistic approach is recommended to plug in regulator loopholes in the system rather than introducing new and complicated layers of rules and regulations. Practically, the self-regulation of markets mantra has failed, but the regulatory reforms introduced so far (the Dodd- Frank Act and the Basel III) are strongly imbedded in

the orthodox theoretical foundation which means nothing will be change practically. These reforms seem insufficient to minimize speculation of the financial institutions. This Crisis has revealed the regulatory challenges for themes also. On the basis of our analyses, it can be concluded that Basel III reforms are not relevant to the needs of EMEs so they should be careful not to blindly follow these rules. The 2007 GFC has emphasized the importance of macro prudential perspectives of a regulatory framework. Although, macroprudential policy is a not panacea but it helps to understand the overall risks and proper implementation of macro prudential measures can lower the costs of the financial crisis.

Are the regulatory reforms introduced so far are enough? The question cannot be answered easily because, the advanced and the EMEs regulatory response to the financial crisis is incomplete and many reforms are not completely implemented. We must be aware that new financial regulation will not remove all risk from the financial sector. Inevitably, a difficult balance needs to be struck between securing our financial system and allowing it to support economic growth.

GENERAL CONCLUSION

This PhD dissertation has investigated the eruption of the 2007 GFC, its contagion to the EMEs and critical evaluation of policy responses of these economies. It has also highlighted the pre and post crisis regulatory inadequacies. Thus, we have attempted to investigate the causes and profundity of this crisis by tracing its roots in the prevailing macroeconomic theory and policy paradigm and study has duly underscored some of its failings. In this vain, the thesis attempted to provide a broad, theory-based diagnosis of what went wrong in the 2007 at the heart of capitalism (US financial markets) and its real time contagion to the EMEs; on the basis of this diagnosis, some important conclusions can be drawn . These are summarised in the following.

The first chapter sets the conceptual framework of the dissertation. It gives a structured overview of the macroeconomic theory and literature on the financial crisis and bubbles and the resulting fragility of the financial system. This critical review leads to conclude that polices of deregulation, financial innovation and globalisation has resulted in recurrent financial crisis in market based economies of both advanced and emerging countries. These policies are intellectually embedded in the orthodox macroeconomic theory (with its basis in rational agents, rational expectations) which belief that financial markets are self-correcting and efficient. However, the recurrent events of financial fragility over the last thirty years demonstrates the inadequacy of the mainstream macroeconomic theory to understand the development of fragility in a market based economies and lack the proper policy framework to contain this fragility. In a contrast to mainstream macroeconomic theory, our analysis points towards the relative superiority of the heterodox approach as an explanation of the build-up of financial fragility and financial crisis. Our debate specifically acmes the significance of Minsky's analytical framework (financial instability hypothesis) as an alternative to the mainstream (efficient market hypothesis) economic theory and policy. As he

has rightly insisted that "the creation of new economic institutions which constrain the impact of uncertainty is necessary," His recommendations about "big government" and "big central bank" with LOLR functions are endorsed for the success of capitalistic markets and the ultimate objective of a stable financial system.

The 2nd chapter of the study has assessed the causes of the 2007 GFC and we have shown that this crisis was the result of a combination of multiple factors including the failures in the financial markets macroeconomic factors and the inadequacies in the regulatory policy implementation. Our analysis highlights the factors that were more causally significant than others in terms of policy implications and it is concluded that the financial system was already so fragile that just about anything could have caused the collapse. It can concluded on the basis of analysis in this chapter that the 2007 GFC is occurred by the problems in the subprime mortgage market and it is the result of a number of risky and irrational economic behaviour pursued in time by financial institutions, public decision makers and individuals, disregarding the risks and economic consequences that might have occurred by spreading through the open markets. However deeper origin and roots of the crisis are traced back to the neoliberal growth paradigm that United States has been following since 80s. This growth paradigm needs bubble to grow and a process of rapid financial innovation initiated by the United States financial/banking industry contributed to the lending and housing boom. Funding of highly leveraged financial intermediaries with short term liabilities increased and ultimately exposed involved intermediaries to potential stress as the market liquidity conditions changed. Unchecked advancement in securitization, derivatives and off balance sheet entities designed to evade regulatory perimeter (particularly capital requirements) have also their part in this meltdown. Subsequently, the accumulating determinants spread by contagion to the entire globe eventually. The main conclusion of this chapter is that while the subprime mortgage market triggered the crisis, its origin must be found in the flawed

institutions and practices with in the financial system particularly the complex and the layered mortgage based securitization in shadow banking.

The 3rd chapter of the thesis provides a critical analysis and a brief review of financial liberalisation polices and financial crisis in the EMEs. It has also documented the factors of resilience and non-resilience between the two groups of EMEs discussed in the study. Nevertheless, varied macroeconomic impact of the financial contagion of the 2007 GFC was more invisible in some EMEs then some others due to country specific characteristics and factors. We have documented considerable differences among the two groups of EMEs under analysis and our comparative analysis shows that how the degree and nature of openness to trade and financial flows, macroeconomic policy discipline and depth and robustness of financial systems and financial reforms introduced in these economies keeping in mind the lessons learnt from the past episodes of crisis have played the role. Thus we can conclude that over all macroeconomic impact remained varied across the EMEs and exhibited with very different degrees of intensity; however most of these economies have done well. We have documents the factors of marked improvement in the resilience of these economies. Nonetheless, this improved performance is attributed to both good policies and a lower incidence of external and domestic shocks: better policies claiming higher share of their improved performance, and less-frequent shocks account for the rest. It is argued that some of the EMEs have benefited from their improved economic fundamentals as they were better able to tackle the adverse effects of the crisis on their economies. Short-term policy responses, involving more accommodative fiscal and monetary policies and better restructuring frameworks put in place were more effective than they were during the earlier episodes of the crisis. At the same, the 2007 GFC has major financial and economic repercussions for EMEs. With this hindsight, the ideal policy responses (or complete blueprints) to contain crisis /fragility in EMEs are not readily available. Nevertheless, an important concluding thought is

the need to get away from the *"one- size-fits-all*" type policy advices. Although, AEs and EMEs are on different levels of macro economy, financial development and long term macroeconomic growth targets but, these are part of same integrated global financial system. Therefore both types of economies need different policy paradigms; policies to prevent financial crisis in EMEs include improving prudential regulation and supervision, limiting currency mismatch, and the most important of all to reconsider their sequencing of financial liberalisation. Market failures in the EMEs should also be taken into account because it is important to identify the source of market failure first and then design regulations to specifically address those market failures. The cautious approach of most of the EMEs revealed that these economies have learnt the lessons from past and tried to improve regulatory frameworks but yet there are important challenges ahead. Thus another important take of our analysis is to do away with the "*rule of thumb"* kind of economic approach that has prevailed upon the cautious policy analysis in the development policy advice for EMEs during the last thirty years. Therefore it is advisable for EMEs to develop policies within the framework of an overall macroeconomic action plan beyond the beliefs of the liberalised philosophy.

The 4th chapter of the study has discussed the regulatory challenges, lessons and a critical review of various financial and regulatory reforms introduced in the post crisis period. We have provided a detailed discussion of the prevailing regulatory framework and a thoroughly investigated the regulatory policies implemented in the aftermath of the 2007 GFC. This chapter has assessed various regulatory measures adopted and evaluates the implications of these policies for emerging markets. The regulatory reforms introduced (the Dodd- Frank Act and the Basel III Rules of BIS) are strongly imbedded in the orthodox theoretical foundation which means nothing will be changed practically in the foreseeable future. Our analysis demonstrates that these reforms are biased towards the specific nature and needs of advanced

economies banking and financial system and EMEs voice has not considered while grafting these reforms, particularly the Basel III Standards. It is empirically tested by various studies that these reforms will have negative impact on the EMEs and lead to increased borrowing costs for EMEs governments, deeply squeezing market liquidity of EMES which ultimately lead the sovereign bonds markets of EMEs volatile. Besides this, these reforms will halt the much needed financial sector development of the EMEs. Due to capacity constraints, weak institutions and lack of skills in EMEs even some of the formidable reforms are difficult to implement in those areas where reforms are very relevant and seems obligatory. Another important conclusion of the 4th chapter is that higher levels of sophistication do not guarantee an automatic stability and the normal operation of the financial system. Some reasonable level of regulatory safeguards, supervisory controls and monitoring is always required. On the basis of our analysis, we can conclude that a holistic approach is highly desirable to plugin regulator loopholes in the system rather than introducing new and complicated layers of rules and regulations. Furthermore, financial regulation needs to be more dynamic taking into account of financial innovations. This off course demands greater monitoring of various types of institutions including banks, their capital, liquidity and their risk management practices. Another important policy conclusion can draw that (public) regulatory policy must have an enhanced macroprudential orientation to address systemic financial risks and it must be complemented by the microprudential regulation. It is also found that, practically the central banks of some resilient EMEs have been undertaking this approach in their own limited capacity. Nonetheless, macro prudential policy is a not panacea or magic bullet and cannot stop financial crisis, yet it is helps to understand the overall risks and if done properly can lower the costs of the financial crisis.

To sum up, two major conclusions which are in repetition are emphasized here. Firstly, the financial markets should not be left to the vicissitudes of free markets, and a relevant

regulatory framework having macroprudential orientations must be implemented to replace the dominant free-market-based approach. Analytical and policy insights ("big government" and "big central bank") endorsed by heterodox economist Hyman Minsky seems appropriate to understand and constrain the fragility of capitalist market economies. Secondly, it is advisable for EMEs to adopt policies keeping in view their own macroeconomic characteristics and the level of financial development and not by the blind faith in market liberalisation or the neoliberal policy paradigm.

Future Agenda of the Research

In writing this dissertation, we had to draw the line in terms of what to include and what not. The financial crisis has generated substantial amounts of new research. Many questions remain to be addressed and there is much room for fruitful future research, nonetheless the research with the potential not only to further our understanding but also to help shape the continued evolution of market economies. So here, we highlight a number of open questions. This, of course, is not meant as an exhaustive list of future research questions in this field, however, our analysis points to a number of interesting future research avenues to explore. First, our analysis indicates the importance of improving our understanding of linkages among emerging markets and also between emerging markets and advanced economies. Second, it will be useful to get a detailed study about the effectiveness of foreign exchange reserves as a cushion against vulnerability and crisis. Thirdly, an important question to future research can be the nature of structure of financial markets in EMEs after the 2007 GFC and the issue of financial inclusion. But beside all these important issues to explore, the most importunate question is that what is alternative to the mainstream or neoliberal growth paradigm?

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ANNEXURES

ANNEX 1: STAGES OF CAPITALIST DEVELOPMENT

	Merchant Capitalism	**Industrial Capitalism**	**Banker Capitalism**	**Managerial Capitalism**	**Money manager Capitalism**
What Distinctive Activity is Financed?	Transportation of Goods; Acquisition of Inventories; Goods Production	Industrial Expansion (Acquisition of Factories & Machines	Industrial Consolidation (Trusts and Mergers)	Macroeconomic Growth and Stability	Increase of Stock —Market Values and Corporate Profits (Often Involves Merger, Buyout or Break-up)
What is the Pivotal Source of Financing?	Commercial or Merchant Bank	Investment Bank	Investment Bank	Central Bank	Institutional Investment Funds (Pension & Mutual Funds)
What is the Fundamental Enterprise or Entity Financed?	Proprietorship And Partnership	Industrial Corporation	Combined Corporation	Private Sector (Financed through the Banking System; Conglomerate Form Dominates in Business)	International Corporation
What Group Holds the Greatest Economic Power?	Power is Dispersed (Merchants and Bankers)	Investment Bankers	Investment Bankers	Corporate Managers (Assumes Government Macroeconomic Coordination)	Money-Fund Managers
What is the Distinctive Input	Labour	Machinery	Management (Coordination of the Industry and the Firm)	Macroeconomic Coordination by Government; Microeconomic Coordination by Business Managers	Expertise in Finance and Accounting
Source: Whalen, 1999, p. 11					

ANNEX 2: HISTORICAL RECORD OF BANK FAILURES IN THE USA

Year & No of Failures	Year & No of Failures	Year & No of Failures	Year & No of Failures
2012 - 38	1992 - 181	1968 - 3	1971 - 7
2011 - 92	1991 - 271	1967 - 4	1970 - 7
2010 - 157	1990 - 382	1966 - 7	1950 - 4
2009 - 140	1989 - 534	1965 - 5	1949 - 4
2008 - 30	1988 - 470	1964 - 7	1948 - 3
2007 - 3	1987 - 262	1963 - 2	1947 - 5
2006 - 0	1986 - 204	1962 - 1	1946 - 1
2005 - 0	1985 - 180	1961 - 5	1945 - 1
2004 - 4	1984 - 106	1960 - 1	1944 - 2
2003 - 3	1983 - 99	1959 - 3	1943 - 5
2002 - 11	1982 - 119	1958 - 4	1942 - 20
2001 - 4	1981 - 40	1957 - 1	1941 - 15
2000 - 7	1980 - 22	1956 - 2	1940 - 43
1999 - 8	1979 - 10	1955 - 5	1939 - 60
1998 - 3	1978 - 7	1954 - 2	1938 - 74
1997 - 1	1977 - 6	1953 - 2	1937 - 75
1996 - 6	1976 - 17	1952 - 3	1936 - 69
1995 - 8	1975 - 13	1951 - 2	1935 - 25
1994 - 15	1974 - 4	1973 - 6	1934 - 9
1993 - 50	1969 - 9	1972 - 2	

Source: Federal Deposit Insurance Corporation United States
http://www.fdic.gov/bank/historical/bank/

ANNEX 3: DESCRIPTION OF FIVE MAJOR FINANCIAL CRISES IN THE USA DURING THE 20TH CENTURY

Event	Market Failure	Policy Response	Success?
BANKERS PANIC OF 1907			
Losses due to speculation; bank run due to links across players	Uncertainty about bank insolvency and lack of liquidity	Creation of Federal Reserve and lender of last resort	Did not deal with uncertainty issue and thus bank runs
GREAT DEPRESSION 1929			
It was huge macroeconomic shock, caused large losses at banks nationwide	Uncertainty about bank firm insolvency led to massive runs	Creation of FDIC and deposit insurance coupled with bank regulation	Served well for about fifty years before becoming antiquated
CONTINENTAL ILLINOIS (1984)			
Losses due to concentrated exposure, lost access to funding	Relied on wholesale, as opposed to retail, funding	Bailout and creation of TBTF designation	Gave TBTF special status without any cost; ignored wholesale funding
SAVINGS AND LOAN CRISIS (1980s)			
Losses throughout system due to risk shifting on the part of banks	Mispriced government guarantee created misaligned incentives	Bailout and the creation in 1991 of risk-based deposit insurance	From 1996–2006, premiums no longer collected due to funds being well capitalized
LONG-TERM CAPITAL MANAGEMENT (LTCM) 1998			
Large hedge fund ran aground	Too interconnected to fail	Negotiated unwind	Ignored LCFI mantra
Source; Acharya et al;2011			

ANNEX 4: A SUMMARY TABLE OF THE CAUSES OF THE ECONOMIC AND FINANCIAL CRISIS

Causes	**Economic and Financial Crisis**
Trigger	• Unsecured loans to US home owners, • Politically welcomed, cleverly sold • Bundled, rated and passed on
Regulation Failures	• Underestimation of risks and belief in self-regulation • Overwhelmed by innovations and internationalization • Pro cyclical effects were supported by rules (mark to market valuation, Basel 2) • Oligopoly structure of credit rating agencies, incompatibilities, stock market listing • Neglect of cumulative systemic risks • Insufficient regulation of the derivative market, SPVs, Hedge funds
Inflated Expectations of Returns:	• Heterogeneity of profits across to countries/businesses, activities • New form of equity substitutes • Leveraging of banks, firms and consumers
Imprudent in incentive systems/risk management	• Bonus for short term success, stock options • Over leveraging and hybrid capital • Illusion about the benefits of mergers and firm size (market wide oligopolies) • Speculation as an attractive career • Higher earnings in financial capital relative to real capital • Risk free promises from advisors, pension funds in mathematical mod
Macro-economic imbalances:	• Savings surplus of the emerging Asian countries, oil producers • Triple deficit in the USA: trade budget and savings • Insufficient reduction in money supply after the recovery in 2002 • Reinvestment of rent seeking capital in the USA
Weakness in coordination	• IMF, Work Bank, G7 • Competition policy, tax havens • Underestimation of systemic risks
Source: Aiginger, 2009 ,p.6	

ANNEX 5: Concept and Definition of Systemic Risk

Viral Acharya (2009, p. 224)	"A financial crisis is 'systemic' in nature if many banks fail together, or if one bank's failure propagates as a contagion causing the failure of many banks,' so systemic risk ,is modeled as the endogenously chosen correlation of returns on assets held by banks"
Bank of England (2009, p. 3)	"Systemic risk has two principal sources. First, there is a strong collective tendency for financial firms, as well as companies and households, to overexpose themselves to risk in the upswing of a credit cycle, and to become overly risk-averse in a downswing. This has a variety of underlying causes, including a perception that some financial institutions may be too important to fail and herding in markets. Second, individual banks typically fail to take into account the spillover effects of their actions on the rest of the financial network"
Claudio Borio (2003, pp. 5-7)	"The commonly held view of systemic risk…tends to see widespread financial distress as arising primarily from the failure of *individual* institutions…, to treat risk as endogenous in terms of the *amplification* mechanisms but not with respect to the *original* shock, which is seen as exogenous,…(and) this goes hand in hand with a rather static view of instability. (Under a broader view),…systemic risk arises primarily through *common exposures* to macroeconomic risk factors across institutions[, which] carries the more significant and longer-lasting real costs…(and)…underlies most of the major crises around the globe"
Monica Billio, Mila Getmansky, Andrew Lo, and Loriana Pelizzon (2010, p. 1)	"Systemic risk can be realized as a series of correlated defaults among financial institutions, occurring over a short time span and triggering a withdrawal of liquidity and widespread loss of confidence in the financial system as a whole"
Markus Brunnermeier, Andrew Crockett, Charles Goodhart, Avinash Persaud, and Hyun Shin (2009, p. xvii and p. 2)	"(A situation in which) ,…there are sufficient externalities that the social, and overall, costs of market failure exceed both the private costs of failure and the extra costs of regulation"
Joseph Daniels and David VanHoose (2005, p. 196)	"…the risk that some payment intermediaries may not be able to meet the terms of payment agreements because of failures by other institutions to settle transactions that otherwise are not related"
Craig Furfine (2003, p. 113)	"The first type of (systemic risk) is the risk that some financial shock causes a set of markets or institutions to simultaneously fail to function efficiently.The second type…is the risk that failure of one or a small number of institutions will be transmitted to others due to explicit financial linkages across institutions."
Group of 10 (2001)	"…the risk that an event will trigger a loss of economic value or confidence in, and attendant increases in uncertainty about, a substantial portion of the financial system that is serious enough to quite probably have significant adverse effects on the real economy"
Jan-Charles Rochet and Jean Tirole (1996, p. 733) Jeremy Staum (2010, p. 2)	"The propagation of an agent's economic distress to other agents linked to that agent through financial transactions…involves risk that arises because of the structure of the financial system and interactions between financial

	institutions. Systemic risk is not the same as *systematic risk*, which is risk explained by factors that influence the economy as a whole. Systemic risk includes systematic risk and also risks arising from phenomena such as *contagion*, the transmission of losses or distress from one institution to another.'
Edward Kane (2010, p. 253)	"The primary characteristic of systemic risk is the emergence of widespread concerns about the *potential* for substantial 'spillovers' of contagious defaults across counterparties in the financial sector and from these defaults to breakdowns in the real economy. This potential is traced either to individual firms' overexposure to common risk factors (under diversification) or to a nexus of derivative contracts that result in an unobservable web of debt that highly leveraged institutions owe to one other (contagion). These concerns cannot be the only symptom because, with the notable exception of the Lehman bankruptcy, in modern crises substantial spillovers of action defaults have remained largely hypothetical. In country after country and sector after sector, monetary and fiscal authorities instinctively choose to intervene in the default process by supporting the credit of 'systemically important' institutions that allow themselves to become economically insolvent. …The existence of this verifiable additional symptom suggests that an authentic definition of systemic risk ought to focus on a firm's or sector's ability to command or extract implicit or explicit life support from national safety nets"
Source: VanHoose David, 2011, p4.	

ANNEX 6: CAPITAL FLOWS, EXPORT FINANCING AND INTERNATIONAL RESERVES *(US$ Billions)*

	2006	2007	2008	2009	2010
EMERGING MARKET COUNTRIES					
Export Credits	37.4	48.7	62.6	-100.8	13.5
International Bond Issues	133.8	189.0	142.4	71.4	100.6
Commercial Bank Loans	403.9	505.1	453.0	195.6	254.7
Inward Portfolio Investment	156.0	231.4	-214.3	-55.2	76.9
Inward FDI	487.6	656.8	674	299.1	399.6
Change in international Reserves	724.2	1248.5	458.5	-393.3	135.4
EMERGING ASIA					
Export Credits	13.1	16.5	28.0	-42.0	7.50
International Bond Issues	46.1	46.5	39.4	23.5	30.4
Commercial Bank Loans	100.8	102.3	81.5	37.3	52.0
Inward Portfolio Investment	106.9	184	-159.8	-68.1	29.3
Inward FDI	215.6	303.1	317.2	127.2	165.1
Change in international Reserves	416.6	711.3	423.1	-37.7	110.8
EMERGING SOUTH ASIA					
Export Credits	3.60	3.20	6.80	-6.1	2.1
International Bond Issues	5.90	6.20	5.80	4.7	5.2
Commercial Bank Loans	10.2	9.80	9.20	7.0	8.2
Inward Portfolio Investment	6.90	36.5	-15.6	5.5	16.1
Inward FDI	25.1	31.2	47.7	32.6	38.3
Change in international Reserves	43.2	102.7	-25.1	-37.6	-15
Source: Jack Boorman, 2009, p. 4					

ANNEX 7: FINANCIAL SITUATION OF TURKISH BANKS BEFORE AND DURING THE 2007 GFC

Table 3.29 : Financial situation of banks before and during the 2007 GFC		
	Before the crisis	**During the crisis**
Loan growth	Increase	Decrease
Share of loans to households	Increase	Increase
Share of foreign currency loans	Decrease	Decrease
Share of short term loans	Decrease	Decrease
Investment in government debt securities	Decrease	Increase
Loan to deposit ratio	Increase	Decrease
Non-performing loan ratio	Decrease	Increase
Share of customer deposit funding	No change	No change
Share of external liabilities due to banks	Increase	Decrease
Leverage	Increase	Decrease
Capital adequacy ratio	Decrease	Increase
Dollarization	Decrease	Decrease
Source; Yörükoğlu and Atasoy;2010,		

ANNEXE 8: TURKISH ECONOMY UNDER THE CRISIS of 2000-2001

	1998	1999	2000 Q1	2000 Q2	2000 Q3	2000 Q4	2001 Q1	2001 Q2	2001 Q3	2001 Q4	2002 Q1	2002 Q2
Annual Real Rate of Growth (%)												
GDP	3.1	-5.0	5.5	6.8	7.9	8.4	-0.8	-9.6	-7.4	-10.4	1.9	8.2
Consumption Expenditure												
Public	1.1	-5.1	4.0	4.6	9.6	5.6	-2.5	-11.5	-9.7	-11.7	-2.0	3.1
Private	6.9	5.1	-0.7	12.6	9.8	5.8	-1.3	-6.6	-15.0	-8.9	2.4	2.7
Investment Expenditure												
Public	-6.7	-18.8	9.4	16.5	20.4	16.4	-14.4	-32.1	-41.5	-50.2	26.1	-1.0
Private	8.0	1.0	10.8	21.8	21.3	19.9	-5.8	-32.0	-23.4	-18.8	-17.4	3.4
Trade Balance												
Exports	11.9	-7.1	12.1	25.3	24.6	13.7	9.7	8.2	5.9	6.4	9.1	4.2
Imports	2.3	-3.7	34.9	25.3	23.5	19.6	-14.5	-31.0	-26.5	-26.0	1.4	19.4
Macroeconomic Prices												
Inflation Rate (WPI)	54.3	62.9	66.1	56.8	43.9	32.7	35.1	61.8	74.7	88.6	77.5	46.8
Exchange Rate ($/TL	71.7	60.6	60.7	49.5	46.6	29.6	64.6	96.5	116.5	114.2	41.9	25.6
ROR on GDIs	29.5	295	-15.8	-9.5	-7.2	6.3	117.5	16.5	7.3	-7.8	-3.7	17.2
Source: Central Bank of Rep. Of Turkey (http://www.tcmb.gov.tr)												

ANNEX 9: A SNAPSHOT OF SOME KEY CONSEQUENCES OF NEW RULES

IMAPCT ON BANKS OPERATION IN EMERGING MARKETS	Rising cost of finance	Liquidity constraints possible where regimes have been developed that do not match emerging market practices. Rising cost of capital leading to increased cost of credit and scarcity in some markets
	Reduced availability of credit due to deleveraging	As banks in advanced economies delever, sell assets and focus on their home markets it is possible there will be a negative effect on emerging markets
	Fragmentation of finance	Policies including extra-territorial legislation and structural reform of banks could lead to a fragmentation of international finance
IMPACT ON GROWTH IN EMERGING MARKET	Trade and commodity finance	Capital and liquidity treatment could lead to reduced availability
	Investment and infrastructure	Liquidity rules could reduce the availability of long-term financing which would have a particularly negative impact on emerging markets that have particularly acute needs for new infrastructure
	Risk management	Some regulatory approaches, such as the use of some hedging techniques to reduce capital requirements, seem alien to emerging markets
	Impact on development of financial markets	Risk that focusing on the policy response to the financial crisis will stop efforts to develop financial markets in emerging countries.
Source; B20 Report, 2012, p6		

ANNEX 10: DIFFERENCES BETWEEN MACROPRUDENTIAL & MICROPRUDENTIAL

	Macroprudential	**Microprudential**
Objective	Limiting systemic risk of the financial system: mitigating the failure of a large segment of the financial system	Limiting idiosyncratic risk of individual institutions: protection of depositors and investors
Implementation of supervisory controls	Top-down: setting prudential control in terms of the probability and costs of systemic distress	Bottom-up: setting and aggregating prudential control in relation to the risk of each institution
Characteristics of risk	Endogenous: Originating in the collective behavior of and interactions between institutions	Exogenous: Given to individual institutions and the disregard of feedback of collective actions
Common exposure to systemic risk	Relevant and important: causes of the fallacy of composition	Irrelevant
Use of instruments	Standard prudential tools plus linking provisioning and pricing of risk to the volume of loan	Uniform solvency standards and codes of conduct
Focus of supervision	(i) A greater weight given to banks and larger and more complex institutions; (ii) Market monitoring: and (iii)Countercyclical orientation	Protection of individual institutions
Sources: Crockett (2000) and Borio (2003)		

ANNEX 11: MACRO PRUDENTIAL INSTRUMENTS	
1. Risk measurement methodologies	**Examples**
By banks	Risk measures calibrated through the cycle or to the cyclical trough
By supervisors	Cyclical conditionality in supervisory ratings of firms; Develop measures of systemic vulnerability (e.g. commonality of exposures and risk profiles, intensity of inter-firm linkages) as basis for calibration of prudential tools; Communication of official assessments of systemic vulnerability and outcomes of macro stress tests.
2. Financial reporting	
Accounting standards	Use of less pro-cyclical accounting standards; dynamic provisions
Prudential filters	Adjust accounting figures as a basis for calibration of prudential tools; Prudential provisions as add-on to capital; smoothing via moving averages of such measures; time-varying target for provisions or for maximum provision rate
Disclosures	Disclosures of various types of risk (e.g. credit, liquidity), and of uncertainty about risk estimates and valuations in financial reports or disclosures
3. Regulatory capital	
Pillar 1	Systemic capital surcharge; Reduce sensitivity of regulatory capital requirements to current point in the cycle and with respect to movements in measured risk; Introduce cycle-dependent multiplier to the point-in-time capital figure; Increased regulatory capital requirements for particular exposure types (higher risk weights than on the basis of Basel II, for macro prudential reasons)
Pillar 2	Link of supervisory review to state of the cycle
4. Funding liquidity standards	Cyclically-dependent funding liquidity requirements; Concentration limits; FX lending restrictions; FX reserve requirements; currency mismatch limits; open FX position limits
5. Collateral arrangements	Time-varying Loan-to-value (LTV) ratios; Conservative maximum loan-to-value ratios and valuation methodologies for collateral; Limit extension of credit based on increases in asset values; Through-the-cycle margining
6. Risk concentration limits	Quantitative limits to growth of individual types of exposures; (Time-varying) interest rate surcharges to particular types of loans
7. Compensation schemes	Guidelines linking performance-related pay to ex ante longer-horizon measures of risk; back-loading of pay-offs; Use of supervisory review process for enforcement
8. Profit distribution restrictions	Limit dividend payments in good times to help build up capital buffers in bad times
9. Insurance mechanisms	Contingent capital infusions; Pre-funded systemic risk insurance schemes financed by levy related to bank asset growth beyond certain allowance; Pre-funded deposit insurance with premia sensitive to macro (systemic risk) in addition to micro (institution specific) parameters
10. Managing failure and resolution	Exit management policy conditional on systemic strength; Trigger points for supervisory intervention stricter in booms than in periods of systemic distress

Source of the TABLE; Galati and Moessner (2011), adapted from BIS (2008).

ANNEX 12: MACROPRUDENTIAL POLICY TOOLS IN SELECTED LATIN AMERICAN COUNTRIES

	Limits on net open positions, currency mismatches	Limits on interbank exposures	Caps on loan to value or debt to income ratios	Countercyclical dynamic provisions
Argentina	✓		✓	
Brazil	✓		✓a	
Chile	✓	✓	✓	✓b
Colombia	✓	✓	✓	✓
Costa Rica	✓	✓	✓	
Mexico	✓	✓		✓b
Peru	✓	✓	✓	✓
Uruguay	✓	✓		✓
Source: Jácome et al.,2012, p15				

a Caps on loan-to-value ratios were eliminated in December 2011.

b Based on expected loan losses.

ANNEX 13: TOP-DOWN VERSUS BOTTOM-UP APPROACHES

	Top-Down Approach	Bottom- Up Approach
Conducted by	Central bank or supervisory agency developing the tools	Individual bank developing their own tools or using their internal model
Data	Using aggregate data of each bank or banking system available at the central bank	Using sub-portfolio/portfolio-level data or customer data of its individual bank
Impact Analysis	Assessing the impact of stress scenario on individual bank and banking system's portfolio quality and capital position	Assessing the impact of stress scenario on financial statements of each customer then aggregating the impacts to find overall impacts on each bank's portfolio and capital position
Pros	It is effective in examining credit risk. Stress test results can be compared across banks. It covers broader perspectives, including feedback effects from the financial system to the macro-economy, and contagion.	Due to its tailor-made and richer data sets, this can better reflect the market and liquidity risk profiles of each bank's portfolio.
Cons	Results may not reflect each bank's risk profile well.	With different methodologies used by each bank, it is difficult to compare the results across banks.
Source; Reza Siregar; 2011, p14		

ANNEX 14: ASIAN EXPERIENCE WITH MACROPRUDENTIAL TOOLS

OBJECTIVE	TOOLS	EXAMPLES
Manage Aggregate Risk Over Time (ie Procyclicality)	Countercyclical capital buffers linked to credit growth	China
	Countercyclical provision	China, India
	Loan to- value - ratio(LTV)	china, Hong Kong, Singapore , Korea
	Direct control on lending to specific sectors	Korea, Singapore, Malaysia and Philippines.
	Debt-service-to-income ratios	PRC; Hong Kong, China; Korea
	Credit limits	PRC; Hong Kong, China; India
	Tighter supervision	PRC; Hong Kong, China; India; Korea; Malaysia; Singapore
	Capital requirements	India; Malaysia
	Exposure limits on lending to specific sectors	Korea; Malaysia; Philippines; Singapore
Manage Aggregate Risk At Every Point(I.E. Systemic Oversight)	Capital surcharges for systemically important banks	China, India, Philippines and Singapore
	Liquidity requirements/funding	India, Korea, Philippines and Singapore
	Limits on currency mismatches	India, Malaysia and Philippines
	loan to deposit requirements	China and Korea
	Foreign Exchange exposure limits	Korea; Philippines
Source; Kawai and Morgan; 2012, p 233		

Résumé français

LA CRISE FINANCIERE DE 2007
ANALYSE DES ORIGINES ET IMPACTS MACROECONOMIQUES SUR LES ECONOMIES EMERGENTES.
QUELS SONT LES LEÇONS ET LES DEFIS DE REGULATION FINANCIERE ?

Présentée par

Shazia GHANI

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Résumé

Il y a plus d'un siècle, William Gladstone[65] exprimait à juste titre l'importance du financement de l'économie comme suit : « La finance est, comme elle l'a toujours été, l'estomac du pays, à partir duquel tous les autres organes prennent le ton ». Un système financier (comprenant les institutions bancaires et non bancaires, les marchés et instruments financiers, les fonds de pension et les compagnies d'assurance, et un grand organisme de réglementation soit la Banque Centrale qui supervise et contrôle les activités de ces intermédiaires) joue un rôle extrêmement important dans les économies de marché. Il s'agit d'un secteur de l'économie qui utilise les ressources productives afin de faciliter la formation de capital grâce à la fourniture d'une large gamme d'outils financiers pour répondre aux différents besoins des emprunteurs et des prêteurs (James Ang, 2007, p. 2). Walter Bagehot (1873) a reconnu le rôle essentiel de la finance afin de faciliter la mobilisation de capitaux pour la croissance industrielle en Angleterre. La littérature économique attache un rôle positif et important au système financier dans son rôle essentiel pour stimuler la croissance économique. Aussi, certains travaux sur la finance et le développement méritent d'être mentionnés, comme John Gurley et Edward Shaw (1955), Goldsmith (1969), Hicks (1969) et Miller (1988). La recherche empirique a également

[65] Premier Ministre britannique en 1858.

établi cette relation positive et le travail fondateur de King et Levine (1993), basée sur l'analyse empirique de 80 pays, a montré que le développement financier conduit à une croissance plus élevée via la promotion de l'épargne privée et de l'investissement.

Une économie croissante et dynamique nécessite un système financier qui peut jouer le rôle d'intermédiaire entre les différents acteurs afin de faciliter la formation du capital grâce à la fourniture d'une large gamme de services et d'outils financiers. Toutefois, le secteur financier ne peut bien remplir ce rôle que lorsqu'il est stable. Dans l'exercice des fonctions énoncées ci-dessus, le système traite des risques financiers, et dans cette situation, il est impératif d'avoir la stabilité du système financier et des marchés financiers en général. En outre, le système financier n'est pas statique et sa constante évolution, en raison des forces de l'innovation financière, de la déréglementation et de la mondialisation financière, le soumet à des instabilités (faillites bancaires, éclatement de la bulle, l'endettement et les échecs dans le système de paiement en raison de gel de la liquidité) et à la fragilité. Néanmoins, la forme la plus visible de la fragilité est la récurrence des crises financières qui sont devenues un élément récurrent des économies de marché (les économies émergentes et les économies avancées) depuis les années 1970. Les effets macroéconomiques de l'instabilité financière peuvent présenter des coûts élevés en raison des interdépendances et contagions dans toutes les économies. Par conséquent, le maintien d'un système financier stable est un objectif important de la politique des pouvoirs publics. L'histoire financière récente des économies avancées et des économies émergentes est remplie d'exemples abondants de crises financières ou de fragilités financières. Certains pays d'Amérique latine ont connu des incidents répétés d'instabilité du secteur financier dans les années 1980. Crise de la dette en Argentine et la fragilité financière de Chili sont des exemples de cette période. Un autre exemple pertinent de l'instabilité financière généralisée a été la crise monétaire de l'Asie de 1997-98, qui s'est développée en Thaïlande et a englouti l'Indonésie, la Corée et la Malaisie. Depuis les années 1990, la majorité des économies émergentes a souffert de la crise financière et des différentes périodes de turbulences financières, le Mexique (1994), la Russie (1998), la Turquie (2001-02), l'Argentine (2001) en sont quelques exemples notables. Néanmoins, les phénomènes de crise financière (instabilité) n'est pas unique aux pays émergents. Les économies avancées ont également été témoins de tels épisodes. Les pays scandinaves dans les années 1980-90 ont connu une instabilité généralisée dans leurs systèmes financiers (la Suède, la Finlande et la Norvège). Les États-Unis aussi ont traversé un épisode de crise. La Grande dépression des années 1930, le krach boursier de 1987, la crise d'épargne et de crédit, le *Long Term Capital Management* et enfin, mais pas des moindres, la crise des *subprimes* en 2007 qui s'est

transformée en une crise financière mondiale, la crise la plus coûteuse depuis la Grande Dépression. Le tableau «A» ci-dessous résume les coûts budgétaires de l'instabilité financière en termes de PIB pour les épisodes de crise dans certaines économies avancées et émergentes :

Table A : Coûts fiscaux de l'instabilité financière					
Pays	**Période**	**Coût fiscal en % du PIB**	**Pays**	**Période**	**Coût fiscal en % du PIB**
Etats-Unis	1984-91	3.2	Mexique	1994-95	18.0
Japon	1991-99	24.5	Brésil	1994-95	10.0
Venezuela	1994-95	7.5	Corée	1997-98	19.5
Norvège	1987-89	6.4	Malaisie	1997-98	34.5
Finlande	1991-93	13.5	Indonésie	1997-98	34.5
Argentine	1980-82	55.3	Chili	1981-83	4.0
Source; Crokett (1997), MaFarlance(1999) and The World Bank (1999)					

Énoncé du problème, la question centrale de la thèse et plan de travail détaillé

Le tableau ci-dessus n'est pas complet car il ne prend pas en compte la dernière crise, la plus coûteuse de l'histoire financière après la Grande Dépression. Selon les estimations du FMI (2009), le coût total de la crise de 2007 a atteint 11,9 milliards de dollars et il serait équivalent à un cinquième de la production annuelle mondiale (Conway, 2009). Un rapport publié par *The Pew Charitable Trust* en 2008-09 a montré que pour les États-Unis les pertes massives s'élevaient à : 5,5 millions d'emplois, 360 milliards de dollars en salaires, 3400 milliards de dollars de valeurs immobilières (Juillet 2008-Mars 2009), 7400 milliards de dollars de valeurs boursières (Juillet 2008-Mars 2009) et 230 milliards de dollars pour le coût du sauvetage financier (Swagel, 2009). Ces chiffres et faits conduisent à une première question cruciale : ***pourquoi la crise de 2007 a éclaté et comment a-t-elle pu avoir des effets dévastateurs d'une ampleur aussi grande sur les économies de marché émergentes. Cette question est directement liée à une deuxième question cruciale qui concerne les défis devant les politiques de réglementation (la bonne approche de la régulation) en vue de stabiliser les marchés financiers.*** Pour avoir une réponse, nous allons procéder en quatre étapes qui vont naturellement constituer les quatre chapitres de la thèse.

1. Afin de répondre à la première question, on cherche à établir la base de la discussion et de l'analyse. Dans ce but, le premier chapitre présente une analyse critique sur les fondements théoriques des politiques qui ont contribué à la fragilité financière au cours des trente dernières années. Deux explications concurrentes, l'approche orthodoxe ou

dominante et l'approche alternative hétérodoxe, sont examinées en détail. L'hypothèse des marchés efficients, le représentant de la vue orthodoxe, et l'hypothèse d'instabilité financière, ce qui représente la théorie hétérodoxe, sont comparées dans leurs analyses respectives sur l'instabilité et l'incertitude sur les marchés financiers et en ce qu'elles proposent comme réponses appropriée en termes de politique économique.

2. Ensuite, dans le Chapitre 2, nous tentons d'identifier les conditions initiales essentielles qui ont joué un rôle pour façonner la crise financière de 2007. Déchiffrer ce qui s'est réellement passé aux États-Unis (*subprimes*) sur les marchés financiers est la clé pour pousser notre analyse plus loin. La comparaison historique de la crise actuelle est dessinée avec des épisodes les plus importants des dernières crises afin de mettre en évidence les théories et leçons politiques qui pourraient en découler.

3. Troisièmement, la thèse va plus loin en établissant la manière dont les mécanismes d'amplification ont joué en temps réel, en transmettant la crise des États-Unis aux pays émergents. Certaines études de cas de pays concernés sont mentionnées afin de mettre en évidence le lien entre la libéralisation financière et la crise financière ou la fragilité dans les pays émergents. En outre, le troisième chapitre de la thèse met en évidence les facteurs qui expliquent les niveaux variables de résilience parmi les économies émergentes et une analyse critique de leur réponse politique à la crise financière de 2007.

4. Et enfin, notre analyse détermine dans quelle mesure les déficits de réglementation ont contribué à la crise financière de 2007. Ce quatrième chapitre présente une analyse exhaustive des réformes réglementaires notables introduites à la suite de la crise de 2007. Notre analyse montrera que les réformes sont encore ancrées dans la théorie macroéconomique dominante et les perspectives de Minsky sont ignorées par les décideurs politiques. L'utilisation des aspects macroprudentiels de la réglementation financière comme outil pertinent de stabilité du système financier est discutée et défendue dans ce dernier chapitre de la thèse.

Cadre théorique et méthodologie

L'étude vise principalement à enquêter sur l'origine de la crise financière aux États-Unis, sa contagion macro-économique aux économies de marché émergentes et les défis d'analyse critique de la réglementation dans l'ère post-crise. Sans aucun doute, cette crise a ébranlé les fondements de l'approche macroéconomique dominante (modèle néolibéral de croissance) et de la théorie politique. L'échec total de la capacité d'autocorrection des mécanismes du

marché, des pratiques de diversification des risques financiers et de l'efficacité du marché (le cachet de la théorie économique dominante) a ouvert une polémique mondiale pour reconsidérer le bien-fondé de la déréglementation des marchés financiers. Avec du recul, il est nécessaire de mettre en évidence l'importance de la perspective alternative sur la crise financière synthétisée par Minsky en termes de théorie et de politique. Dans ce but, la thèse vise à évaluer la pertinence du cadre théorique de l'instabilité financière et de re-réglementation de Minsky en raison de son approche historique institutionnel. En effet, Minsky souligne les effets déstabilisateurs de l'innovation financière, le rôle de l'euphorie cumulative, et l'habileté des banquiers/institutions financières à contourner la cadre de la réglementation. Ainsi, il semble plus approprié d'analyser l'évolution de la fragilité financière et de la crise par rapport à la politique macroéconomique en général. Sur le plan politique, bien que Minsky ne soit pas optimiste pour éliminer complètement la crise, il croît qu'il serait possible d'en atténuer le poids à travers une régulation du comportement spéculatif des marchés financiers et ce par le biais d'un ensemble complet de politiques. À cet égard, il préconise le rôle des institutions (« gouvernement puissant » et « banque centrale puissante ») comme disjoncteurs contre l'instabilité et l'euphorie. De plus, sa vision sur le développement du capital dans une économie est nettement pertinente pour les économies de marché émergentes aussi. Pour étayer les arguments, la littérature théorique est comparée et examinée sur le sujet et des exemples sont tirés du système financier américain et des cas de pays émergents sont analysés. L'étude met en évidence les facteurs importants intervenant dans la politique réglementaire, identifiés à partir de la compréhension des causes fondamentales de la crise financière de 2007.

0.1-Problématique de la crise financière et la théorie macroéconomique

Kindleberger précise que: « *La crise financière est comme une jolie fille: difficile à définir, mais reconnaissable à la vue* » (Kindleberger et Laffargue, 1982, p. 2). Sans aucun doute, la métaphore de Kindleberger reflète l'impuissance que les décideurs et les universitaires ont tous face à des épisodes répétés de crise financière ou de volatilité depuis des siècles. Les occurrences répétées de la crise financière dans les économies émergentes et avancées depuis les années 1970 révèlent qu'il est facile de rechercher des éléments déclencheurs de la crise une fois qu'elle entre en éruption, mais qu'il est beaucoup plus difficile de discerner les signes avant-coureurs d'un effondrement imminent d'une monnaie, d'une banque ou d'un titre de marché. La théorie économique a désigné globalement deux explications possibles de la crise

financière et du développement de la fragilité du système économique. Une première tradition utilise la théorie orthodoxe afin découvrir les sources et les causes de la crise financière et l'autre volet de recherche utilise l'approche hétérodoxe pour l'explication. L'approche orthodoxe est également parfois appelé l'approche économique traditionnelle. Les principaux piliers de l'orthodoxie sont le «*monétarisme*» de Milton Friedman et la *Nouvelle économie classique* dont le pionnier est Robert Lucas. Cette école croît en l'efficacité des mécanismes de marché (complétude et autocorrection des marchés) comme les principes fondamentaux de réglementation de la vie économique. Or, l'éruption de la crise américaine des *subprimes* en 2007 et sa contagion mondiale ont montré un tournant dans l'histoire du capitalisme et de la pensée économique. Il semble manifeste que la domination durant 30 ans sur la politique économique d'une idéologie du marché libre des modèles d'équilibre général, qui a été populairement appelée le fondamentalisme néolibéral et du marché, ou parfois le Consensus de Washington, n'a abouti à rien en termes de stabilité. Le cadre de base de l'économie fondé sur le marché est lié à la notion de «*main invisible*» et la manifestation moderne de ce principe est l'hypothèse de marché efficaces. Selon cette hypothèse, les marchés financiers sont tellement bien construits que toutes les informations pertinentes disponibles sur tout actif financier sont déjà intégrées dans les prix. La plus importante affirmation de cette hypothèse est que l'intervention gouvernementale et une réglementation accrue ne peuvent que mener à l'inefficacité des marchés. La théorie macroéconomique dominante a eu de sévères critiques après la crise de 2007 et il est soutenu qu'une telle crise financière était une inévitable conséquence de la croyance théorique dans le «laissez-faire» et dans l'hypothèse de marchés efficients. Enracinées dans cette croyance, depuis les années 1980, les économies avancées et émergentes ont poursuivi l'objectif de la déréglementation et de la libéralisation financière.

La théorie orthodoxe voit la crise comme une série d'événements malheureux mais isolés, à peine reliés les uns aux autres, et la plupart du temps causés par des problèmes particuliers. Les monétaristes croient que la crise financière est essentiellement une crise bancaire. Friedman et Schwartz (1963) et Cagan (1965) ont longuement étudié les différentes crises bancaires aux États-Unis. Friedman et Schwartz (1963) soutiennent que les défaillances bancaires sont le résultat de "paniques" injustifiées et la plupart des échecs sont dues aux problèmes d'illiquidité. Basée sur la théorie macro-économique dominante, la recherche empirique est abondante sur les différentes explications des mécanismes de la crise financière. Les modèles de première génération ont souligné le rôle des variables macroéconomiques à l'origine de la crise monétaire dans un système de taux de change fixes (Flood et Marion, 1999). Les modèles de deuxième génération ont mis l'accent sur le rôle des attaques

spéculatives. Dans les modèles les plus récents, les déséquilibres institutionnels, l'asymétrie de l'information et les effets de réseaux sont considérés comme les facteurs derrière la crise (Allen et Gale, 2000 ; Kaminsky et Reinhart, 2003 ; Kodres et Pritsker, 2002; Yuan, 2005 ; Pavlova et Rigobon, 2007 et Allen et Babus, 2008 ; Obstfeld, 1986 ; Garber, 1996 ; Eichengreen, Rose et Wyplosz, 1996). L'asymétrie de l'information et les problèmes d'aléa moral de Mishkin (1992) offrent de nouvelles dimensions à la recherche sur la crise financière. Les modèles de troisième génération, suite à la crise financière de l'Asie orientale, examinent la crise monétaire et la fragilité du secteur financier et de la contagion à d'autres pays. Valdés (1997), Kaminsky et Reinhart (1998), Eichengreen et al. (1996), Kaminsky et Reinhart (1998), Morris et Shin (1998), Calvo (1998), Kodres et Pritsker (2002) sont quelques contributions essentielles à mentionner ici.

Contrairement à la théorie dominante, l'école de pensée hétérodoxe (également connue sous le nom de l'approche par la dette et la fragilité financière) a apporté une contribution remarquable au sujet du développement de la crise financière et de la fragilité et a influencé la réflexion macroéconomique. La tradition riche et prestigieuse de l'analyse offerte par K. Wicksell (1898), I. Fisher (1933), C. Kindleberger (1978) et H. Minsky (1982) a fait remarquer que les fluctuations cycliques caractérisées par l'instabilité dynamique sont générées en raison de l'interaction entre les courants et contraintes financières inter-temporels dans une économie monétaire sophistiquée. Néanmoins, les perspectives de Minsky ont pris de l'importance au milieu de la confusion théorique après l'effondrement financier de 2007. Ces perspectives ont été longuement évoquées par des universitaires et des décideurs politiques, même dans les milieux traditionnels avec un regain d'intérêt pour son héritage scientifique. Ses partisans ont mis en évidence les aspects les plus éclairants de sa vision de la fragilité financière et le rôle de la réglementation financière (Arestis et Sawyer, 2001; Arestis 2001; Bellofoire et Ferris, 2001; Davidson, 1992, 2001, 2004; Dymski 2003; Toporowski, 1999, 2001; Portes, 1998). Tout à fait étonnamment, même les décideurs au «centre d'excellence» de l'orthodoxie et dans les principales institutions de réglementation (BCE, BoE, la BRI et le FMI) se réfèrent à lui comme un géant sur les épaules duquel les décideurs politiques peuvent s'asseoir.

0.2- Développement systémique de la fragilité et le rôle des institutions

Comme indiqué plus haut, les théoriciens classiques excluent toute possibilité d'une crise ou de fragilité si le système n'est pas perturbé par des chocs externes. Au contraire, les

théoriciens hétérodoxes croient que même sans choc exogène, le système peut être source de fragilité. Minsky a estimé que l'économie capitaliste a une tendance inhérente à développer l'instabilité, ce qui aboutit à une grave crise économique, le point d'appui de son « *hypothèse de l'instabilité financière*». Cette hypothèse a été à l'origine d'un programme de recherche visant à comprendre le fonctionnement et l'évolution du capitalisme financier et, en particulier, les épisodes récurrents d'instabilité financière. En conséquence, l'économie passe par des cycles qui sont liés au type de financement impliqué comme la *hedge* finance, la finance spéculative et la finance *Ponzi*. La *hedge* finance est une situation dans laquelle les entreprises s'attendent à des flux de trésorerie raisonnables provenant des investissements et qui permettraient de faire face à leurs paiements contractuels, présents et futurs. La finance spéculative se produit quand l'entreprise a prévu des flux de trésorerie en deçà des paiements contractuels à court terme tout en étant en mesure de répondre aux obligations de paiements d'intérêts et cette étape de financement spéculatif implique la reconduction de la dette arrivant à échéance. La troisième étape du cycle est le financement *Ponzi* et il est similaire au financement spéculatif, mais il s'agit d'un amortissement négatif. Pour les entreprises *Ponzi*, pour l'essentiel, l'encours de la dette augmente et les emprunteurs impliqués dans les financements spéculatifs et de *Ponzi* s'attendent à assurer leurs paiements sur les dettes par le refinancement, c'est-à-dire l'augmentation de la dette (Minsky, 1992, 1986).

Une revisite du cadre d'analyse de Minsky dans le premier chapitre va ouvrir une polémique pour comprendre la supériorité relative de l'approche hétérodoxe intégrée avec des points de vue institutionnels et historiques de la crise financière. Bien que différents chercheurs aient appelé la crise actuelle comme le «*moment de Minsky*» (McCulley, 2007 ; Magnus, 2007 ; Whalen, 2007 ; Lahart, 2007 ; Kregel, 2009), notre objectif n'est pas de débattre sur la précision du mécanisme de l'évolution de la crise prévue par Minsky, mais plutôt de mettre en évidence l'importance dee propositions de Minsky dans la compréhension du développement de la fragilité et du rôle de la structure des institutions à cet égard. Les institutions sont très importantes pour Minsky et leur rôle est entendu comme celui des mécanismes disjoncteurs, empêchant l'euphorie. La période post-crise 2007 est une époque de grande opportunité pour reconsidérer ce rôle parce que la théorie macroéconomique standard n'a pas permis de prévoir la crise, elle n'a pas non plus aidé à comprendre ou à concevoir des solutions (Buiter, 2009). De ce fait, une lecture Minksienne semble un bon début pour la compréhension des fragilités.

0.3 Contexte historique de la crise financière. Existe-t-il des parallèles ?

Les expériences des économies développées et émergentes offrent à la fois des leçons instructives et des mises en garde sur les phénomènes de crises et de bulles financières. Hyndman présente un compte rendu détaillé des perspectives historiques dans son célèbre livre «*Crise de commerce au XIXe siècle* ». L'œuvre classique de Kindleberger sur l'histoire financière « *Manias, Panics, and Crashes* » donne un compte rendu détaillé des différents épisodes de l'histoire. « *Une Histoire monétaire des Etats-Unis 1867-1960* » par Milton Friedman et Anna Schwartz est, elle aussi, une pièce très importante de référence à mentionner ici. « *La crise internationale de la dette dans une perspective historique »* par Eichengreen et Lindert (1992) et « *This Time Is Different: Eight Centuries of Financial Foll*» par Reinhart et Rogoff (2011) présentent un certain récit impressionnant de la question. L'histoire moderne de la crise financière commence par une grave crise en 1929 lorsque les marchés financiers s'effondrent et le PIB des États-Unis baisse de plus de 30%.

Cependant, depuis 1970, il y a eu une tendance observable de changements rapides et turbulents dans le comportement de financement des diverses institutions marquées par l'endettement croissant, les prix des actifs volatils et les périodes de stress financier dans le secteur financier et non financier. Un examen rapide de l'histoire économique américaine suggère que la mauvaise gestion de la monnaie et du crédit a conduit à la crise financière et à plusieurs explosions au cours des siècles. D'autres événements importants des États-Unis peuvent être l'échec de la Continental Illinois Bank et de Trust Company en 1984, les difficultés des caisses d'épargne dans les années 1980 et la crise de *Long-Term Capital Management* en 1998. La liste n'est pas exhaustive et on peut y inclure le krach de Wall Street de 1987, la bulle Internet du début des années 2000 et enfin et surtout la crise financière des *subprimes* de 2007. Pour les pays émergents, il semble que la crise financière est devenue une malédiction des années 1990. Plusieurs de ces pays ont particulièrement souffert de l'épuisement des entrées de capitaux dans le sillage de la crise de 1997-99. La vague dévastatrice d'implosions financières au Mexique, en Thaïlande, en Corée du Sud, en Russie, au Brésil, en Turquie, en Argentine et dans d'autres économies émergentes ont jeté des millions de personnes dans la pauvreté et la misère. En raison de sa profondeur et des pertes économiques à travers le monde, la crise de 2007 a quelques parallèles avec la grande dépression des années 1930.

0.4-La libéralisation financière et la crise financière dans les économies émergentes

Fidèle à la théorie macro-économique dominante, la majorité des économies émergentes a poursuivi des politiques de libéralisation financière et de déréglementation des marchés financiers depuis les années 1980. Depuis, les crises financières (la dette, la monnaie et la crise de change liés) ont été une caractéristique essentielle de ces économies qui coïncide avec leur intégration accrue aux marchés financiers internationaux (Agosin et Huaita, 2011). Ainsi, dans le cas de pays émergents, l'élément déclencheur de la crise financière est la mise en œuvre des politiques macroéconomiques de libéralisation et de déréglementation financières et non l'innovation financière (Frenkel, 2003). En dépit de ses avantages supposés à long terme, la libéralisation financière peut être déstabilisatrice à court terme en encourageant les banques nationales à s'engager dans des activités risquées et spéculatives et à créer des comportements d'aléa moral (Caprio, 1992; McKinnon et Pill, 1997; Corsetti et al, 1999; Huang et Xu, 1999; Hellmann et al., 2000; Demetriades et Andrianova, 2004). La libéralisation financière, en l'absence d'un cadre réglementaire approprié, a amplifié l'attitude de prise de risque des institutions financières dans plusieurs économies émergentes. La déréglementation des marchés financiers, précédemment «refoulés», augmente les taux d'intérêt intérieurs dans les pays émergents et la combinaison de taux de change fixes et la libéralisation du compte de capital conduit à des rendements augmentés sur les marchés financiers. Ce type de crise financière a d'abord été observé en Argentine et au Chili dans les années 1970 (c'est à dire les épisodes dits du cône sud). Crises de type similaire ont été observées au Mexique et en Argentine en 1995, mais aussi dans la crise asiatique de 1997, la crise russe de 1998, la crise brésilienne de 1999 et les crises argentine et turque de 2001, 2002. La crise de 2007 a montré qu'il était impératif de fournir de nouvelles informations sur ces arguments opposés concernant la libéralisation financière grâce à une nouvelle analyse des économies émergentes. Pour atteindre cet objectif, le troisième chapitre de la thèse aborde ces questions en détail. Initialement, les pays émergents semblaient être déconnectés de la crise financière de 2007, mais plus tard, ces économies ne pouvaient pas se protéger des tensions et de la crise financière et le canal de matières premières a joué un rôle dans la contagion de la fragilité et de la crise financière. Néanmoins, l'impact de la crise est très varié parmi les pays émergents. Certains ont bien résisté à la crise de 2007, particulièrement ceux qui avaient appris les leçons du passé et amélioré leur politique macroéconomique et leurs cadres réglementaires.

0.5-L'intervention du gouvernement sur les marchés financiers et le rôle de la réglementation

La crise de 2007 a véritablement souligné l'insuffisance des cadres de réglementation d'avant la crise et «*reflète le plus grand échec de la réglementation dans l'histoire moderne*». Stiglitz (2010) conclut à juste titre que la principale leçon de la récente crise est que la poursuite de l'intérêt personnel, notamment dans le secteur financier, ne peut pas conduire au bien-être sociétal. Henry Kaufman avance que « *plus notre économie est orientée vers le marché, plus elle a besoin de supervision financière officielle* » (Financial Times, 6 Août, 2008). La politique macro-économique ancrée dans le « laissez-faire » et l'approche par la « main invisible » ne voient pas la nécessité des interventions gouvernementales car elle croît que les marchés peuvent s'auto-corriger eux-mêmes en cas de déséquilibre ou de crise, ce qui est en totale contradiction avec la perspective hétérodoxe qui pense que l'intervention du gouvernement est nécessaire, à travers les institutions. L'approche réglementaire dominant repose sur un cadre institutionnel déficient qui a été en grande partie capturé par des intérêts financiers. Elle surestime la capacité des marchés et sous-estime l'importance de l'intervention des pouvoirs publics et de la réglementation. A l'opposé, Minsky soutient qu'un gouvernement fort et les grandes banques centrales sont une condition nécessaire pour maintenir les économies capitalistes stables. Par conséquent, une intervention intelligente et des structures institutionnelles sont nécessaires aux économies de marché. Le treizième chapitre de son œuvre « *Stablizing an Unstable Economy* » offre des recommandations détaillées et défend le rôle des institutions comme disjoncteurs contre l'euphorie.

La crise de 2007 a inauguré un nouvel élan à la nécessité d'une réforme de fonds réglementaires requis pour rendre les marchés financiers plus résilients. Quelle est la bonne approche pour réglementer et superviser le secteur financier? La réponse ne peut être simple, et pourtant un réexamen des principes de base est nécessaire pour concevoir des mécanismes réglementaires efficaces mais souples qui ont la capacité de faire face aux innovations financières et aux risques systémiques. La discussion dans le quatrième chapitre contribue à l'évolution du débat sur la politique de réglementation dans les économies avancées et l'impact de certaines législations extraterritoriales des EI sur les économies de marché émergentes. Une leçon importante de la crise de 2007 est que la régulation financière doit être plus dynamique, en tenant compte du rôle des innovations financières et de nouveaux produits. Une question très importante qui est analysée dans le quatrième chapitre porte sur l'efficacité de la loi Dodd-Frank Act, récemment adoptée, et des normes bancaires de Bâle III.

Ces réformes réglementaires récemment introduites sont fortement inclinées vers les problèmes des pays avancés et se traduiront par la diminution d'accès des économies émergentes à la finance internationale et un arrêt du développement des marchés de capitaux dans ces économies. Par ailleurs, les fondements théoriques de ces réformes sont toujours intégrées dans l'approche orthodoxe donc pratiquement rien ne devrait changer dans un avenir prévisible.

0.6-Orientation macroprudentielle de la règlementation financière et de la supervision

L'approche macroprudentielle de la réglementation a émergé dans la période postérieure à la crise de 2007 comme un cadre de stabilisation des marchés financiers largement accepté. Elle évalue et répond au système financier dans son ensemble. Il vise à réduire l'accumulation des problèmes systémiques et à renforcer la résilience du système financier aux chocs défavorables en réduisant les coûts sociaux des risques systémiques (BOE, 2009 ; CSFM, 2010b ; Clément, 2010 ; Galati et Moessner, 2011). Le Rapport de Genève (2009), le Squam Lake Report (2010), le Rapport de la Commission Warwick (2009), le Comité de Bâle sur le contrôle bancaire, G-30 Report (2010) en sont quelques exemples récents. Ronnie Phillips (1997) a fait remarquer la nécessité pour les régulateurs de surveiller les menaces émergentes pour la stabilité des marchés financiers - un processus qui est désormais appelé la «surveillance macroprudentielle».

Comme indiqué dans les pages précédentes, l'étude est structurée en quatre chapitres suivis d'une conclusion générale qui présente les idées fortes. Ces idées sont fondées sur un diagnostic basé sur la théorie et l'analyse des problèmes considérés dans le corps de l'étude.

Chapitre 1: La montée de la finance fragile, la crise financière récurrente et la théorie économique

Le premier chapitre de la thèse est divisé en trois sections. La première section développe une analyse et détermine les facteurs qui expliquent l'augmentation de la fragilité financière (crise financière) au cours des trois dernières décennies. Elle identifie également les principaux changements structurels dans la nature de la finance et des marchés financiers au cours de cette période. Le concept de fragilité financière remonte à Fisher (1933) et à Keynes (1936), qui ont théorisé que le financement de l'investissement par la dette peut avoir des effets déstabilisateurs. Les écrits et les résultats des études de ces deux économistes cités étaient

motivés par leurs observations personnelles de la « Grande Dépression » et des nombreuses paniques bancaires (Lagunoff et Stacey Schreft, 2008). Dans les décennies suivantes, Minsky (1977) a avancé une version légèrement plus forte de la même idée à savoir que les économies capitalistes modernes sont intrinsèquement instables ou fragiles en raison de leur forte dépendance à l'endettement pour financer l'investissement.

Au cours des trente dernières années, les marchés financiers internationaux sont devenus extrêmement intégrés. Les accords économiques postérieurs à la Seconde Guerre mondiale ont été basés sur la philosophie économique de libre-échange, du capitalisme de laissez-faire, et des théories économiques néolibérales. Il en a résulté une déréglementation des marchés financiers (à la fois dans les économies industrialisées et dans les économies émergentes) accompagnée d'innovations financières complexes et de la mondialisation financière. Toutes ces forces ont joué un rôle central dans l'amplification des fragilités et crises financières dans les économies avancées et émergentes. En analysant les causes de la fragilité financière, étudiées par l'OCDE, Driscoll a soutenu que trois sources potentielles de fragilité financière peuvent être identifiées. La première est la croissance du financement par emprunt durant le cycle économique. La deuxième source est la moindre liquidité des sociétés et des institutions financières. La troisième source est l'évolution des structures institutionnelles et réglementaires liée à la déréglementation des marchés financiers (1991, p. 15). Dans un environnement financier mondialisé et libéralisé, les besoins de liquidités progressifs des structures financières rendent ces institutions et les marchés fragiles et sujets à différents types de crise financière. L'interaction de la déréglementation des marchés financiers, l'innovation financière et la mondialisation/libéralisation financière a augmenté la fragilité financière et la probabilité des crises financières récurrentes. Bien que les conditions propres à chaque pays aient pu aggraver la situation, les exemples de plusieurs crises dans les pays émergents et l'analyse des marchés financiers des États-Unis montrent clairement le rôle central de ces trois facteurs. Néanmoins, le capitalisme dirigé par la finance et bénéficiant de l'innovation financière, de la déréglementation des marchés financiers et des forces de la mondialisation, s'est propagé dans le monde entier, avec sa logique implacable du marché libre de réglementation et atteint l'apogée de la financiarisation et du capitalisme actionnarial/ gestionnaire de fonds. Certains économistes hétérodoxes l'ont qualifié de «capitalisme patrimonial» (Aglietta, 1998), de « régime de croissance tirée par la finance » (Boyer, 2000) ou de « régime d'accumulation dominé par la finance » (Stockhammer 2007). Minsky l'a désigné comme le « capitalisme des gestionnaires d'argent » et son hypothèse d'instabilité financière permet de comprendre le capitalisme gestionnaire de fonds et de son effondrement

(Bellofiore, 2011, p. 6, p. 13) Pour mieux comprendre la complexité de ces questions, il est très important d'analyser la fondation théorique de ces questions. Dans cette veine, la section suivante présente une analyse théorique de deux écoles de premier plan de la théorie macroéconomique.

La section 2 présente une étude comparative de deux littératures théoriques dominantes sur la crise financière. Il s'agit de l'approche orthodoxe défendue par l'approche monétariste de Friedman et Schwartz (1963) et de Cagan (1965) et de l'approche alternative postulée par Fisher (1933), Minsky (1977, 1982) et Kindleberger (1978) sur le développement de la fragilité et de crise financière. Les fondements théoriques de l'origine, des causes et des mécanismes de propagation de la crise financière/développement de la fragilité financière sont importants à cerner afin de comprendre l'évolution de la crise ainsi que les meilleures politiques à concevoir. La théorie économique sur le sujet peut être divisée en deux écoles. Le courant orthodoxe postule que la crise financière est d'origine monétaire et est essentiellement due à des faillites bancaires provoquées par l'intervention du gouvernement. L'approche hétérodoxe, défendue par Fisher, Minsky et Kindleberger, connue comme «la dette et la fragilité financière », suppose, au contraire, que la crise financière suit un cycle de crédit avec un certain déplacement positif qui mène à un plus haut niveau d'endettement, et où la sous-estimation du risque par les prêteurs conduit l'économie dans une bulle. Lorsque cette bulle éclate en raison d'un choc négatif, une crise bancaire survient. Cette tendance est une caractéristique normale d'un cycle économique (Fisher, 1933; Minsky, 1977 ; Kindelberger, 1978). Cette approche a été maintes fois confirmée par la récurrence de l'envolée des prix des actifs et de la crise de la dette dans les économies avancées et émergentes. Ainsi, le premier chapitre de la thèse jette les bases d'une analyse alternative sur la fragilité financière et ouvre une polémique sur les facteurs qui l'alimentent. Il préconise la supériorité de l'approche hétérodoxe pour comprendre les origines et le développement systémique des instabilités et ses implications pour la réglementation et la supervision bancaire.

Dans la section 3 du chapitre l'hypothèse des marchés efficients est comparée à l'hypothèse d'instabilité financière de Minsky pour avoir une vue sur la politique et les réformes des deux approches concurrentes. Une analyse comparative de ces deux explications concurrentes des tendances de l'instabilité des marchés financiers est importante car de ces deux idéologies se dégagent les deux ensembles de propositions de politiques pour minimiser l'instabilité. Ces deux théories sont fondamentalement différentes dans leur vision des marchés financiers en général et sur la proposition des politiques pour stabiliser les marchés

instables. L'hypothèse de marchés efficients a servi de base à la libéralisation des marchés financiers comme un moyen d'atteindre la stabilité des marchés financiers régis par le mantra d'autocorrection. En revanche, l'autre paradigme appelle à une réglementation vigilante de la finance et des institutions et à des règles contraignantes dans la surveillance du comportement des participants aux marchés. L'hypothèse de marchés efficients a été développé dans les années 1960 par Eugene Fama dans sa thèse de doctorat, et plus tard publié en 1970 (Fama, 1970). Fama définit un marché efficient comme un marché où les *prix* reflètent *toujours* pleinement les informations disponibles. La déclaration de l'hypothèse de marchés efficients (*sur un marché informationnelle efficace, les variations de prix doivent être imprévisibles si elles sont correctement anticipées*) a été présentée par Paul Samuelson en 1965 et il s'en est suivi un débat quant à la question de savoir si les marchés boursiers fonctionnent en réalité comme des marchés efficients. Le noyau de l'hypothèse de marché efficient implique qu'il n'y a pas de possibilité d'arbitrage pour le gain sans risque dans un marché efficient et si, à tout moment de telles opportunités apparaissent, le mécanisme de marché les corrige et elles ne persistent pas longtemps.

L'hypothèse d'instabilité financière a été développée par Hyman Minsky qui stipule que la stabilité engendre l'instabilité. Minsky a développé une théorie originale du cycle des affaires basée sur une conception financière endogène des fluctuations économiques (Nasica, 1999, p.1). L'élément clé de son approche conceptuelle c'est qu'il met la finance au centre de l'analyse économique, ce qui en fait analytiquement inséparable de ce qu'on appelle parfois l'activité économique réelle, et selon lui dans ce système, les banques sont très importantes parce que les économies capitalistes sont gérées par les banques. Une autre grande perspicacité de Minsky porte sur le mouvement dynamique de *hedge* à la finance spéculative, qui est intrinsèquement non durable et qui se transforme par conséquent en finance *Ponzi*. Cette position Ponzi provient de l'intérieur du système et fait actuellement l'objet de formalisation dans les modèles d'instabilité endogène dans une dynamique non linéaire (Galbraith, 2011). Le premier théorème de l'hypothèse de l'instabilité financière est que l'économie a différents régimes financiers sous lesquels elle est stable et d'autres dans lesquels elle est instable. Le second théorème de l'hypothèse de l'instabilité financière est que sur une période de longue prospérité de 60 ans, les économies ont transité de relations financières qui soutiennent un système stable à de relations financières qui favorisent un système instable (Minsky, 1992, pp. 7-8). Autrement dit, l'hypothèse d'instabilité financière suppose que les cycles économiques de l'histoire sont composés de (i) la dynamique interne de l'économie capitaliste, et (ii) le système des interventions et des règlementations qui sont

conçus pour maintenir l'économie dans des limites raisonnables (Minsky, 1992, p. 8). Pour contenir les maux que les marchés peuvent infliger, les économies capitalistes développées ont besoin d'un ensemble d'institutions et d'autorités, qui peuvent être caractérisées comme étant l'équivalent de disjoncteurs. Ces institutions arrêtent les processus économiques qui reproduisent l'incohérence et relancent l'économie avec de nouvelles conditions initiales (Minsky et al., 1994, p. 6).

Par conséquent, l'évolution des marchés financiers vers l'instabilité est expliquée par trois positions des investisseurs. Dans le cas de *hedge finance*, les emprunteurs sont en mesure de rembourser les intérêts et le principal lorsqu'un prêt vient à échéance, une situation présentant des pratiques de crédit de précaution. Dans le cas de la finance spéculative, ils ne peuvent rembourser que l'intérêt et doivent donc se reposer sur un noveau financement. Et dans le cas d'une finance *Ponzi*, les entreprises doivent emprunter encore plus pour payer les intérêts sur leurs dettes existantes (Minsky, 1982, 1986a). Selon Minsky, sur une longue période tranquille, le succès des investissements passés incite les entreprises à devenir moins averses au risque et à modifier progressivement leurs portefeuilles de manière à ce que la série chronologique des flux de trésorerie futurs générés par des actifs soit de plus en plus appelée à remplir la série chronologique des paiements du service de la dette au titre des passifs (Minsky, 1995a, p. 85). Non seulement l'endettement augmente, mais il devient de plus en plus court pour deux raisons. Tout d'abord, la production a tendance à être de court terme et, donc, nécessite un financement à court terme (Minsky, 1980, p. 506). D'autre part, le taux d'intérêt à court terme de la dette est inférieur au taux d'intérêt sur la dette à long terme dans une période tranquille, que les agents pensent qu'ils ont une meilleure connaissance du court terme que ce qu'ils ont pour le long terme dans un monde rempli d'incertitudes. Aspects institutionnels et historiques de l'analyse de Minsky sont très importants pour comprendre l'évolution de l'instabilité dans les économies fondées sur le marché et pour mettre au point des mesures pour limiter cette instabilité. Contrairement à l'approche dominante, Minsky offre un programme complet de politiques et de réformes pour stabiliser une économie instable et nous croyons que les structures institutionnelles et les interventions sont une condition importante pour la réussite des économies fondées sur le marché. Par conséquent, les recommandations de Minsky sur le rôle de «Big Government» et de la «Grande Banque centrale» et les fonctions de prêteur en dernier ressort sont fortement approuvées comme la conclusion politique. Ainsi, le premier chapitre de la thèse a jeté les bases de notre discussion et analyse. Le prochain chapitre étudie l'éruption de la crise financière de 2007 et met en évidence les lacunes majeures des politiques de la théorie dominante néolibérale pour les

marchés financiers. Il met en évidence la manière dont les marchés financiers déréglementés aux États-Unis ont graduellement développé la bulle des *subprimes* qui a éclaté en Septembre 2007 et tout l'édifice de la philosophie intellectuelle néolibérale s'est effondrée avec lui.

Chapitre 2: Anatomie de la crise financière mondiale de 2007

Le chapitre 2 présente une évaluation exhaustive de l'évolution et des causes de la crise et met en évidence la dynamique qui sous-tend l'origine de la crise de 2007. Il met l'accent sur son origine et son évolution aux États-Unis. Ces causes sont importantes à analyser pour mettre en évidence les importantes leçons à tirer de cette crise financière qui se produit une fois par siècle ainsi que les recommandations de politiques qui viseraient à éviter sa réapparition dans l'avenir. A cet effet, le chapitre est divisé en trois sections. La première section présente brièvement un aperçu historique des différents épisodes de la crise financière aux États-Unis et dans les pays émergents. Ce n'est pas la première crise financière, au cours des 50 dernières années. On peut compter environ 40 événements avec des caractéristiques liées à la crise financière tant dans les économies industrialisées que dans les économies émergentes. En discutant de ces événements de l'histoire financière des Etats-Unis et des économies émergentes, nous examinons aussi brièvement plusieurs facteurs (l'innovation, la mondialisation, la déréglementation et la libéralisation financière) qui pourraient expliquer la crise financière mondiale. Ce bref aperçu historique nous amène à conclure avec quelques implications politiques qui seront tirées des éléments mis en évidence.

Nous présentons quelques épisodes importants des États-Unis ci-dessous pour mettre en évidence l'inefficacité des marchés financiers, les défaillances du marché et l'inadéquation de la réglementation financière (Acharya et al., 2011, p.2). Il s'agit notamment de la panique bancaire de 1907, la Grande Dépression de 1929-33, la crise des caisses d'épargne (années 1980), le défaut de Continental Illinois de 1984 (le fameux cas de « too-big-to-fail »), la crise de LTCM, les crises de 1998 et de 2007. La crise financière de 2007 a son parallèle avec la Grande Dépression (1929) en termes de conséquences économiques et la récession qui en résulte. On fait valoir que la bulle immobilière de 2007 est une transformation ou l'extension de la bulle Internet précédente qui a été contenue par les décideurs temporairement sans s'attaquer aux racines réelles. Néanmoins, tous ces épisodes de crise financière mettent en évidence l'échec des politiques de réglementation des marchés. Toutefois, les dispositifs institutionnels qui ont suivi ont, en principe, été destinés à empêcher la répétition de tels événements. La panique bancaire de 1907 a été aggravée en raison de l'incertitude quant aux

règles de solvabilité des banques. Pour résoudre le problème, la banque centrale américaine (Federal Reserve System) a été créée avec la fonction de prêteur en dernier ressort. La Grande Dépression de 1929 a souligné l'incertitude sur l'insolvabilité des institutions bancaires ainsi que ses conséquences dévastatrices. Pour répondre cette question, la Federal Deposit Insurance Corporation (FDIC) a été créée. La période suivante a été marquée par une relative tranquillité en termes de paniques bancaires. Le défaut de Continental Illinois, en 1984, a mis en évidence la question de *too big to fail* et l'importance d'institutions financières fortement interconnectées et aussi l'impact du défaut d'un agent sur les marchés financiers globaux. Les autorités ont créé des mécanismes de surveillance réglementaire pour les institutions *too big to fail*. La crise des caisses d'épargne des années 1980 a soulevé elle aussi la question très importante de sous-évaluation des garanties de l'Etat qui créent à leur tour de mauvaises incitations pour les marchés financiers. Pour résoudre ce problème, les autorités d'émission ont mis en place l'assurance-dépôts basée sur le risque au lieu de compter sur l'assurance-dépôts seulement. Sans aucun doute, la crise financière actuelle est différente et plus profonde que ces épisodes de crise précédents qui étaient contenus. Cette crise a un certain parallèle avec la grande dépression des années 1930 de par son impact sévère sur l'économie réelle et la croissance économique. Les dégâts de la crise boursière de 2001 ont été limités et la crise elle-même abordée avec succès par les autorités parce que l'empreinte de la dette de ces bulles n'était pas si profonde, notamment comparée à celle de la bulle immobilière de 2007. La massivité de cette bulle et l'impact de son éclatement sur l'économie américaine et par la suite sa contagion à la planète est sans précédent. Cette situation est vraiment le reflet de la nature systémique de la crise et de son impact profond sur l'économie mondiale. Ainsi, même après cinq ans passés depuis la crise, les économies avancées sont encore dans la dépression et l'avenir économique semble encore très sombre. Historiquement, pour les économies émergentes, les crises financières ont précisément commencé avec un processus de précipitation dans l'ouverture et la libéralisation financières (Olivie, 2009). Depuis la fin des années 1980, quand la plupart de ces économies émergentes ont commencé la déréglementation et la libéralisation des marchés financiers dans le sillage de la mondialisation, elles ont été durement touchées par des hauts et des bas. A des phases où elles sont parfois soulevées par des entrées massives de capitaux, succédées des phases où elles plongent dans le chaos par des contraintes de taux de change et de crédit. Cette section présente un bref récit historique sur la crise financière antérieure (banque, de change et de la dette) dans les pays émergents. Au cours des 25 dernières années, le Mexique (1994-95), la Thaïlande (1997), la Malaisie (1977), le Chili (1982-84), la Corée du Sud (1997), l'Indonésie

(1997), la Russie (1998), la Turquie (2000-01) et l'Argentine (2002) ont tous été frappés par des crises financières de formes différentes. Cependant, deux caractéristiques remarquables doivent être spécifiées ici. La première comprend le statut des pays touchés dans la trajectoire du développement, ce sont des pays en « développement ». La deuxième est le fait que ces crises ont eu tendance à coïncider avec des réformes de libéralisation financière qui avaient permis aux investisseurs internationaux à la recherche de rendements élevés de trouver des opportunités dans des économies en développement.

Les principales causes et racines de la crise de 2007 sont analysées et évaluées dans la section 2. Les origines de la crise ont été examinées par Rogoff et Reinhart (2008), Aiginger (2009), Eichengreen et O'Rourke (2008), FMI (2008, 2009, 2010), Krugman (2008, 2009, 2010), Calomiris (2009), Gorton (2009), Ormerod (2010), Solow (2009), FSA (2009), la CNUCED (2008, 2009, 2010), l'UNDESA (2010), le US Council of Economic Conseillers (2010) et Claessens et al (2010). Notre analyse s'appuie ici dans le débat actuel sur les origines et l'évolution de la crise sur la base de ces études. La littérature sur les facteurs de la crise de 2007 est assez conséquente, mais en gardant à l'esprit les objectifs de la thèse, il semble pertinent de souligner la part de responsabilité des politiques macroéconomiques, les échecs des marchés financiers et l'absence de réglementation qui sous-tend la crise financière de 2007. L'entrée du système en crise peut être caractérisée par quatre phénomènes majeurs, qui ont des similitudes avec les épisodes précédents de crise abordés dans la première section. Quand ces quatre facteurs sont combinés, ils augmentent fortement le risque de crise financière. Les caractéristiques communes de la crise actuelle avec le passé sont identifiées comme suit: (1) une hausse des prix des actifs qui se sont révélées non viables, (2) une expansion du crédit qui a conduit à un endettement excessif, (3) une accumulation des prêts marginaux et du risque systémique, et (4) l'échec de la régulation et de la supervision à suivre les activités des marchés financiers et l'incapacité à prendre de l'avance sur la crise quand elle a éclaté (FMI, 2010 ; Claessens et al., 2011). Outre les facteurs communs ou familiers décrits ci-dessus, il y a de nouvelles dimensions qui joué un rôle important dans l'amplification de la gravité, l'ampleur et la propagation mondiale de la crise. Quatre principaux aspects qui étaient nouveaux dans cette crise sont les suivants: (1) l'utilisation généralisée d'instruments financiers complexes et opaques, (2) l'interdépendance accrue entre les marchés financiers, (3) le degré élevé de levier des institutions financières, et (4) le rôle central du secteur des ménages (FMI, 2010, p.7). Gourinchas a soutenu que trois facteurs qui assuraient un segment relativement insignifiant des marchés financiers américains se sont transformés en une crise financière mondiale. Tout d'abord, il distingue les changements structurels profonds dans le

système bancaire, avec l'émergence du modèle «*originate-to-distribute*» qui, avec la titrisation prononcée du crédit, a conduit à une baisse des normes de crédit des institutions, ce qui a entraîné une incapacité générale à réévaluer le prix des produits financiers complexes lorsque les marchés ont tari de liquidité. Deuxièmement, la dépendance du secteur des banques du financement à court terme les expose à des risques substantiels de financement. Troisièmement, l'augmentation de la mondialisation financière et le fort appétit des institutions financières étrangères pour les instruments de crédit structurés aux États-Unis ont également joué un rôle (Gourinchas, 2010, p. 2). Selon une étude du FMI, la crise de 2007 était fondée sur une combinaison de facteurs communs aux crises financières précédentes et de nouveaux facteurs. Néanmoins, elle a mis en lumière plusieurs lacunes dans la réglementation et l'architecture financières, en particulier dans le traitement des institutions financières d'importance systémique (FMI, 2010, p. 3). La principale conclusion du rapport FCPI était que c'est l'absence de réglementation gouvernementale et de surveillance du crédit et des valeurs mobilières adossées à des hypothèques qui a conduit à l'effondrement financier de 2007. En outre, les facteurs tels que les taux d'intérêt bas, le crédit facile, la réglementation laxiste et des prêts hypothécaires toxiques ont également stimulé l'éclatement de la bulle immobilière. Comprendre les causes sous-jacentes de la crise de 2007 est importante pour plusieurs raisons. La plus importante est que le diagnostic correct de la genèse et des forces motrices de la crise est important pour tirer les conclusions qui s'imposent et ce afin d'éviter qu'elle ne se reproduise. En second lieu, identifier les principales causes pourrait nous aider à comprendre pourquoi la crise s'est développée de la façon dont elle l'a fait et, troisièmement, la connaissance des causes pourrait être utilisée pour formuler une réponse politique adéquate afin de minimiser la réapparition de tels événements dévastateurs dans l'avenir (Morrow, 2011). On fait valoir que les graines de la crise de 2007 (et la récession qui en résulte) sont semées dans la période de la *Grande Modération* (Barrell et Davis, 2008) parce que les décideurs et les régulateurs sont devenus laxistes en matière de surveillance. Trois facteurs principaux ont été discutés plus largement : politique monétaire accommodante aux Etats-Unis dans les années d'avant la crise (Martin et Milas, 2009), les déséquilibres mondiaux et le relâchement de la régulation ainsi que le développement du *shadow banking*. Le point de vue de la politique monétaire accommodante est particulièrement associé à John Taylor, qui a fait valoir (Taylor, 2008, 2008a) que sur la période 2001-2006, les taux d'intérêt américains étaient historiquement très bas. D'autres analystes et décideurs (Caballero et al, 2008 ; Morris, 2008 ; Bean, 2008) ont mis en évidence l'importance des déséquilibres mondiaux dans la préparation de la crise. D'importants excédents des comptes courants dans les pays émergents

avec des marchés financiers sous-développés, en particulier la Chine, ont conduit à d'importants flux financiers vers les économies industrialisées, ce qui a conduit à une baisse des taux d'intérêt aux États-Unis et à d'autres effets indésirables. Le laxisme de la régulation financière est le troisième facteur largement défini (Borio, 2008). La réglementation laxiste a conduit à la forte croissance des risques hors bilan enregistrés par les institutions financières et les investissements massifs dans les produits financiers aux risques sous-estimés ont créé les conditions préalables à la détérioration rapide des marchés financiers, ce qui a finalement orienté le système financier vers la crise.

L'interconnexion des différents échecs du marché à joué un rôle très important dans l'éruption et la propagation de la crise de 2007. Ce n'était pas la première fois que les taux d'intérêt étaient bas et les prix des actifs en hausse aux États-Unis. Par conséquent, on peut affirmer que la crise de 2007, à bien des égards, est le résultat de faiblesses inhérentes qui prévalent sur les marchés financiers, ce qui a permis une accumulation massive et à une sous-estimation du risque (Norgren, 2010, p. 21). Certaines défaillances du marché découlaient de l'incapacité des marchés à corriger ces anomalies par le biais d'un mécanisme autorégulateur, de la doctrine du *too big to fail* et des incitations des marchés déformés, en premier lieu. En second lieu, il y avait l'opacité des institutions et instruments financiers. Troisièmement, l'accumulation excessive de l'effet de levier dans les institutions financières. Les défaillances graves de la réglementation comprennent la présence d'un système bancaire parallèle, la prise de risque excessive des institutions financières, un risque systémique incontrôlé et sans précédent, une gouvernance financière insuffisante, la complexité de l'innovation financière, des pratiques myopes de gestion des risques dans les institutions financières. En plus de ces échecs patents de la réglementation et du contrôle, les règles en matière de capital et de liquidité se sont révélées insuffisantes face à la pro-cyclicité et la situation a encore été exacerbée par les règles comptables *mark-to-market* qui permettent aux banques de réduire les besoins en capitaux dans les conditions financières stables. L'absence d'un cadre juridique approprié pour faire face aux renflouements massifs et aux injections de capitaux aggrave encore plus la situation. Il est clair que la crise financière de 2007 n'était pas le résultat d'un seul facteur ou d'un simple échec de la politique. Tous les marqueurs discutés ci-dessus ont joué un rôle majeur dans son éruption. La crise a montré que les marchés libres et sans entrave ne sont ni efficaces ni stables et ils ont échoué dans leur fonction basique dont la fixation des prix.

La section 3 du chapitre résume la théorie importante et les leçons à tirer en termes d'orientations politiques. Le débat dans le chapitre est clos par une brève conclusion. Nous discutons plus tard des leçons les plus impératives que nous pouvons et devons tirer de la crise de 2007. Individuellement, aucune de ces leçons ne garantit un système financier parfait, mais prises ensemble, elles peuvent fournir de meilleures garanties pour la stabilité du système financier. Il est important de tirer les leçons des erreurs du passé afin de corriger l'avenir avec une meilleure réglementation des marchés financiers. Chaque crise a quelques occasions et certaines menaces, tandis que la crise actuelle a miné la croissance économique et a entraîné l'économie mondiale dans un marasme sévère. Elle a également conduit à des changements fondamentaux dans la réflexion sur le rôle de la réglementation financière et une intervention intelligente du gouvernement dans l'économie. Certaines des leçons politiques à tirer de la crise financière mondiale sont présentées ici (Bordo et Lane, 2010b, pp. 30-31). Nous devons apprendre deux types de leçons des événements des dernières années si l'on veut lutter efficacement contre les crises financières dans le futur. Ce sont les leçons théoriques et politiques. Bien que les deux types de leçons soient liés entre eux, pour la clarté de l'analyse, nous allons les discuter séparément. L'échec de la théorie macroéconomique courant et du modèle de croissance néolibérale a été largement reconnu après la crise financière de 2007. Ce sont les idées qui sont au cœur de la macroéconomie traditionnelle qui fournissent la justification intellectuelle des politiques économiques qui ont favorisé la crise de 2007 (Ormerod, 2010). Comme nous l'avons vu dans le premier chapitre et notre analyse dans le deuxième l'a établi, la cause fondamentale de l'effondrement de 2007 a été l'acceptation sans réserve de l'hypothèse des marchés efficients (EMH) et la croyance en l'autocorrection des marchés financiers par les décideurs politiques américains (McCombie et Pike, 2010). L'hypothèse d'efficience de marché a fait un grand tort, en encourageant un comportement imprudent chez les grands acteurs du monde d'entreprise sur les marchés financiers et en décourageant toute tentative sérieuse de régulation de leurs activités. La crise des *subprimes* a soulevé des questions fondamentales quant à l'utilité de l'économie dominante (Allington et al., 2011). Greenspan (alors gouverneur de la Fed) a reconnu devant le Congrès le 23 Octobre 2008 que « le paradigme moderne des risques a régné pendant des décennies. Tout l'édifice intellectuel, cependant, s'est effondré ». La principale leçon méthodologique pour la macroéconomie qui en ressort est la nécessité d'une compréhension détaillée de la dynamique qui sous-tend le cadre institutionnel. A juste titre, Akerlof (2007, p. 28) affirme que « au lieu d'un appui for sur les tests statistiques, les disciplines autres que l'économie en général mettent beaucoup plus l'accent sur une approche naturaliste. Cette approche implique des

études de cas détaillées. Ce type d'observation à la petite échelle a souvent été la clé de la compréhension de la grande échelle ». À certains moments, une étude de cas jette davantage de lumière que n'importe quelle autre étude de régression. King (2010) a expliqué qu'au moins six doctrines traditionnelles ont été réfutées par la crise de 2007 et la plus importante d'entre elles est l'échec des anticipations rationnelles qui, lorsqu'elles sont appliquées à des transactions financières, appellent à la forme la plus légère de la réglementation gouvernementale. L'erreur avait à juste titre été notée par certaines critiques perspicaces bien avant le début de la crise financière (King, 2009). Soutenir que « les prix sont justes » et affirmer que « il n'y a pas de repas gratuits » ne sont pas des énoncés équivalents alors que les deux sont vrais dans un marché efficient, le second énoncé peut aussi être vrai dans un marché inefficace: simplement parce que les prix sont loin de la valeur fondamentale et ne signifient pas nécessairement qu'il n'y a aucun excès de risque ajusté aux rendements moyens (Barberies et Thaler, 2003, p. 1057). Des conclusions similaires ont été tirées par James Tobin (1987) et plus récemment par Adair Turner (2009, pp. 39-42).

Ce chapitre offre la preuve qu'en 2007, la crise financière a été le résultat d'une combinaison de défaillances macroéconomiques et d'échecs des marchés financiers et d'absence de réglementation. Bien qu'il existe une longue liste de causes, notre analyse s'est concentrée sur les causes les plus importantes. La principale conclusion est que, même si le marché des *subprimes* a déclenché la crise, ses causes profondes sont enracinées dans l'imparfait et l'exhaustif paradigme néolibéral de croissance que les Etats-Unis suivent depuis les années 1980. La déréglementation des marchés financiers et son résultat majeur, à savoir l'innovation financière incontrôlée, sont une partie importante de l'explication de la crise. Le progrès des produits dérivés non arrimés aux titres réels et la titrisation – des entités hors bilan conçues pour échapper aux exigences de capital et de capture réglementaire – constituent des caractéristiques très particulières de la crise de 2007. L'échec de la politique de réglementation et les échecs des marchés ont joué un rôle décisif, mais fondamentalement c'est le modèle de croissance néolibérale qui est à blâmer, car il s'appuie sur des bulles en croissance. Ce chapitre met en lumière quelques leçons importantes en soulignant les implications pour la pensée, la théorie et la politique économiques. Nous avons appris que la politique monétaire seule ne peut assurer la stabilité économique et financière. Nous avons appris que l'autocorrection des marchés libres est une illusion et un système crédible de la discipline de marché soutenue par une forte réglementation prudentielle est nécessaire. Nous avons tenté de fournir une large base théorique au diagnostic de ce qui se passait vraiment mal en 2007. Après avoir débattu de l'évolution et de l'origine de la crise de 2007, il est pertinent

d’étudier la contagion et son impact macroéconomique sur les économies émergentes. Pour ce faire, le prochain chapitre fait la lumière sur la question de la contagion de la crise aux pays émergents et présente une analyse approfondie de leur réponse politique pour la contenir.

Chapitre 3: La finance fragile devient globale

Contrairement aux épisodes de crise antérieurs, crise de 2007 a une caractéristique particulière, elle a son origine dans les marchés financiers des plus avancés et s’est propagé aux pays émergents à travers les canaux du secteur financier et immobilier. Cependant, il y a une graduation importante dans l'expérience individuelle, dans laquelle certaines économies émergentes se remettent rapidement de la crise, certaines se rétablissent progressivement et d’autres mettent des années à se remettre de la crise. La Corée, le Mexique, le Pakistan et la Turquie ont été moins résistantes tandis que la Malaisie, la Thaïlande, le Brésil, l'Argentine, l'Inde, le Vietnam et le Chili ont bien résisté et semblaient bien préparés pour faire face à cette crise. Contrairement à l'épisode précédent de la crise financière, les graines de la récente crise ont été semées dans les économies avancées, en particulier aux États-Unis. Les principales conclusions de notre discussion sont que les pays émergents qui avaient amélioré les fondamentaux de leur politique et réduit la vulnérabilité de leur système dans la période pré-crise ont récolté les bénéfices des différentes réformes introduites quand la crise a éclaté. En particulier, nous tenons à souligner quelques points ici. D'une part, l'impact initial de la crise a été moins prononcé dans les économies affichant un niveau faible dans les indicateurs de vulnérabilité face aux chocs exogènes. Les réserves de devises étrangères ont également joué un rôle important dans la protection des économies émergentes contre la forte hausse de l'aversion au risque global. Deuxièmement, les économies de marché émergentes qui avaient un espace politique large ont été en mesure de réagir de façon plus agressive face à la crise avec des mesures budgétaires et monétaires et ce grâce à leurs moindres contraintes de financement. Troisièmement, les pays émergents qui se sont remis de la crise plus rapidement sont ceux qui ont introduit des grands plans de relance budgétaire, qui avaient des fondamentaux macroéconomiques solides avant la crise et avaient un nombre croissant de partenaires commerciaux. Quatrièmement, les défis politiques pour les pays émergents ne sont pas tous les mêmes. Il existe une hétérogénéité considérable dans le cadre de la politique requise pour que les pays émergents sortent de la crise. Néanmoins, les politiques accommodantes des économies avancées (assouplissement quantitatif) peuvent être la voie qui offre une grande marge de manœuvre aux pays émergents (Moghadam, 2010, p. 1). Une

analyse complète des pays émergents, aussi bien ceux qui ont résisté à la crise que ceux qui l'ont traversé avec moins de force, est réalisée afin d'identifier les principales caractéristiques qui ont rendu ces économies plus ou moins vulnérables à la transmission de la crise. Cette analyse nous permettra de formuler une réponse politique sous forme d'architecture réglementaire nécessaire à la stabilité des marchés financiers ainsi qu'à leur résistance face aux crises.

L'objectif principal de ce chapitre est de structurer les preuves comme un premier pas dans la connexion des différentes crises à divers ensembles de mesures politiques placés dans divers cadres institutionnels avant et durant la crise. Dans ce contexte, le troisième chapitre est divisé en trois sections.

La section 1 présente une brève revue de la libéralisation et de la déréglementation financière dans les pays émergents et en particulier la dynamique de la crise financière dans les économies de marché émergentes. Cette section traite également des principaux canaux de transmission de la contagion de la crise de 2007. En général, dans les pays émergents, la crise financière se développe par deux voies: par la mauvaise gestion de la libéralisation et de la mondialisation financière, ou par de graves déséquilibres budgétaires. En plus il y a d'autres facteurs supplémentaires qui peuvent également initier le déclenchement de la crise. Les économies émergentes connaissent une crise financière lorsqu'elles libéralisent leurs systèmes financiers en éliminant les restrictions sur les institutions financières et les marchés financiers intérieurs (déréglementation de l'industrie financière et la privatisation des banques, assurances, etc.). Ce processus, connu sous le nom de libéralisation financière, conduit ces économies à ouvrir leurs marchés aux capitaux internationaux alimentés par la mondialisation (Mishkin, 2008, p. 19). Toutefois, les expansions de crédit qui en résultent sont généralement marquées par des pratiques de prêt à risque où les banques nationales empruntent à l'étranger pour financer des projets risqués, souvent en opposition avec les pratiques courantes. L'argent rapide se déverse dans les marchés financiers locaux et le système, mais en raison de la structure institutionnelle inadéquate et la faiblesse des cadres réglementaires, la probabilité d'une récession et de la crise se multiplie. Ainsi, la mauvaise gestion de la libéralisation financière/mondialisation est la cause la plus commune de la crise financière dans les économies émergentes. Les crises au Mexique en 1994 et de nombreux pays d'Asie en 1997 ; la Corée du Sud, 1997 ; la Malaisie, 1997; la Turquie 2000, 2001, corroborent ce point de vue.

Depuis la grande époque du régime Reagan-Thatcher (et du consensus de Washington ou de recette néolibérale de croissance des années 1970-90), les économies émergentes ont été

encouragées à s'ouvrir et à intégrer les marchés financiers internationaux dans la croyance que les marchés financiers permettent à la bonne allocation de l'épargne vers des investissements productifs. Ainsi ces pays ont libéralisé leurs marchés financiers et levé les restrictions sur leur commerce et leur finance. La libéralisation financière est généralement suivie de la déréglementation des secteurs financiers nationaux et des banques. Néanmoins l'augmentation des entrées de capitaux affecte positivement le PIB, les investissements, le chômage, mais ces développements conduisent aussi implicitement à la fragilité financière du système en raison de la nature risquée des investissements et le manque de structures institutionnelles et réglementaires. Il y a de nombreuses preuves théoriques et empiriques dans la littérature pour suggérer que l'intégration financière des économies émergentes a conduit à une incidence plus élevée de crise (Jeanne et Gourinchas, 2005). Les vues sur la libéralisation financière (la libéralisation du compte de capital) et la crise financière (crise bancaire, monétaire et de la dette) ont été brièvement synthétisées dans cette section en référence aux œuvres les plus influentes en la matière : Diaz-Alejandro (1985), King et Levine (1993), Reinhart, Calvo et Leiderman (1994), Eichengreen, Rose et Wyplosz (1995), Goldstein et Turner (1996), Honohan (1997), Williamson et Mahar (1998) Eichengreen et al. (1998), Demirgüç-Kunt et Detragiache (1998), Rossi (1999), Kaminsky et Reinhart (1999), Corsetti, Pesenti et Roubini (1999), Arestos et Demetriades (1999), Brooks et Oh (1999), Rajan (2001) et Gruben, Koo et Moore (2003). Le séquençage et l'ordre des politiques de libéralisation financière, en se référant à la littérature la plus influente, et l'éruption réelle des différentes crises financières sont également traités dans cette section.

La transmission de la crise de 2007 à travers les canaux financier et commercial est une autre question des plus importantes débattues dans la première section. Même si, à première vue, ces deux canaux semblent séparés, la majorité des pays émergents a souffert de la crise financière mondiale de par les liens commerciaux et financiers. Cependant, on note des différences considérables entre les pays émergents (Kose et Prasad, 2010 ; FMI, 2010). Les effets sur les marchés financiers sont caractérisés par un effondrement des prix des actifs et la croissance du crédit privé, une augmentation des primes de risque et la dépréciation du taux de change qui conduit à hémorragie de capitaux et à un désendettement mondial. Wong (2012) a fait valoir qu'il existe deux principaux canaux par lesquels la crise financière a été transmise aux pays émergents, ce sont le canal financier et le canal du commerce. Ces deux canaux importants sont discutés dans ce qui suit.

La section 2 présente les études de cas de pays émergents qui ont bien résisté à la crise de 2007. Nous y discutons des effets des tendances macroéconomiques sur la crise dans les pays émergents. Dans cette section, sont analysées, l'efficacité globale de la réponse politique et les mesures introduites par chaque pays pour se protéger contre les aléas de la mondialisation financière. Les pays émergents les plus résistants, qui ont bien tenu face à la crise, sont la Malaisie, le Brésil, la Thaïlande, le Chili, l'Inde, le Vietnam et la Pologne. La plupart de ces pays émergents a connu une croissance économique sans précédent grâce à l'amélioration des politiques macroéconomiques, la responsabilité financière et la stabilité politique entre 2003 et 2007. Ces économies ont considérablement amélioré leurs fondamentaux macroéconomiques et introduit des réformes structurelles et financières depuis les précédents épisodes de crise. Ces changements ont conduit à une composition améliorée des flux de capitaux, à l'amélioration de la structure de la dette et à un meilleur accès aux marchés internationaux. Nous avons discuté en détail les cas de la Thaïlande et du Chili.

La section 3 donne une analyse en profondeur des économies émergentes qui ne pouvaient pas se protéger de l'impact macro-économique de la crise de 2007 et n'ont donc pas pu résister au choc mondial. Ces pays émergents sont le Mexique, la Turquie, le Pakistan, la Corée du Sud, la Russie, les Philippines et l'Afrique du Sud. Une analyse critique des politiques de libéralisation financière et de déréglementation de ces économies émergentes durant la dernière décennie comme source de crise financière est également présentée dans cette section. Elle met en évidence les défis de court/long termes auxquels font face ces économies émergentes. Nous avons particulièrement mis l'accent sur le Mexique et la Turquie parce que ces deux ont opté pour des politiques de libéralisation des marchés au cours des trois dernières décennies, mais en raison du cadre réglementaire inadéquat et incapacités institutionnelles, ces deux économies ne pouvaient pas résister à la crise financière mondiale. Pour le Mexique, les impacts les plus visibles se sont manifestés à travers le canal des échanges commerciaux car 80% des exportations sont destinés aux Etats-Unis et en raison de l'effondrement des *subprimes*, la demande pour les produits exportés avait fortement diminué. La discussion et l'analyse de la réponse politique à la crise dans le troisième chapitre amène à conclure que la crise de 2007 a gravement affecté les économies émergentes à des niveaux d'impact différents et avec des différences dans les degrés d'intensité. La crise de 2007 est venue dans les économies émergentes comme un choc externe, se posant ainsi en opposition par rapport aux crises précédentes, qui étaient pour la plupart d'origine locale. Notre étude analytique a identifié les principales caractéristiques qui ont rendu ces économies plus ou moins vulnérables à la transmission de la crise des économies avancées. Les réformes de

libéralisation financière sans cadres réglementaires adéquats et la dépendance à l'exportation a rendu ces économies vulnérables aux chocs externes et internes. Néanmoins, les caractéristiques des pays ont joué un rôle important dans la variation de la réponse et de l'impact initial de la crise. Notre analyse montre que les fondamentaux macroéconomiques solides, la diversification des échanges et la qualité de la réglementation financière peuvent réduire la vulnérabilité d'un choc initial. Il est évident que cette faiblesse du système bancaire et financier n'est pas compatible avec l'ouverture financière. A cet effet, des cadres réglementaires complets doivent être en place avant de procéder à la libéralisation à grande échelle. Les économies émergentes exigent des garanties contre les volatilités spéculatives mondiales. La réglementation financière dans la plupart des pays émergents doit être conçue pour répondre aux particularités de leur propre économie et non à ceux des pays industrialisés. La meilleure approche pour les économies émergentes est de construire des cadres soutenus de politique macroéconomique qui ne doivent pas seulement se concentrer sur le paradigme de la politique néolibérale menée par la main invisible. Les pouvoirs publics, les régulateurs et les superviseurs des pays émergents doivent s'assurer que les participants du marché agissent selon les règles. Le troisième chapitre a préparé le terrain pour fermer notre discussion sur la crise financière en discutant du problème de réglementation du secteur financier dans le chapitre suivant de l'étude.

Chapitre 4: Les défis réglementaires et les réformes après 2007

La crise de 2007 a non seulement mis en évidence les lacunes et les faiblesses du cadre réglementaire aux États-Unis, mais elle a aussi montré l'existence de segments financiers non réglementés dans l'économie mondiale. Le rapport du FCIC conclut que la crise financière de 2007 s'explique par des échecs en matière de réglementation et de supervision (Rapport FCPI, 2011). En effet, c'est un point de vue largement accepté que la crise financière de 2007 découle de l'insuffisance de la portée de la réglementation et que la solution est de combler ces lacunes en prenant la réglementation existante et en l'étalant à travers les institutions et les administrations. Cinq années se sont écoulées depuis l'éclatement de la crise, mais les paradigmes de la politique idéale ne sont toujours pas clairs. Les décideurs se penchent sur la façon dont les politiques économique et réglementaire doivent interagir durant les périodes d'expansion boursières et durant les périodes suivantes (FMI, 2011). Ainsi, la crise a remis en cause les autorités de réglementation à travers le monde et souligné la nécessité de penser «hors de la boîte » (*out of the box*) et de mettre en œuvre des politiques non orthodoxes et des

réformes pour stabiliser les marchés financiers et le système financier (Dewatripont et Freixas, 2012). La réglementation financière est devenue un thème central du débat au niveau mondial parce que la crise a montré que les formes traditionnelles de la réglementation financières sont insuffisantes. Il a été observé que chaque crise est suivie par de nouvelles mesures réglementaires, par conséquent, il est souligné que les décideurs politiques ne devraient pas s'en tenir aux caractéristiques apparentes de la crise actuelle. Plus de réglementation n'est pas la solution, mais un ensemble complet de réglementation qui ait le potentiel pour évoluer dynamiquement avec le système financier est nécessaire. Les formes traditionnelles de la réglementation microprudentielles (conçues pour assurer la sécurité et la solidité des différents intermédiaires financiers) basées sur l'autocorrection des marchés a échoué. Un large consensus s'est dégagé quant à l'efficacité de la réglementation macroprudentielle. Il est évident que non seulement la discipline du marché a échoué, mais la surveillance publique s'est également révélée inefficace pour appréhender l'étendue de la vulnérabilité des marchés et agir de façon décisive. Cette crise a également établi que les cadres réglementaires doivent reconnaître la complexité de la finance moderne et des marchés financiers. Le règlement doit être compatible avec les incitations des particuliers et compléter la discipline de marché. Un autre aspect important est de garder en vue la globalité du système financier et, dans ce sens, la réglementation doit avoir une orientation macroprudentielle. Il est inutile de réglementer seulement les compagnies d'assurance et les banques dans l'espoir que la limitation de leur marge de manœuvre imposera une discipline à l'ensemble du système (Tonveronachi, 2010, p. 136). Il est clair que les régulateurs doivent faire un meilleur travail d'identification et d'évaluation des risques systémiques posés par les grandes institutions complexes et viser à minimiser les lacunes dans les compétences réglementaires (Bair, 2011). Ainsi, une déduction fondamentale de l'expérience récente est que l'approche microprudentielle n'est pas suffisante. Une politique de réglementation avec une perspective macroprudentielle qui peut évaluer et répondre au système financier dans son ensemble semble nécessaire (Hirtle et al., 2009). Sur ce fond, ce quatrième chapitre propose une synthèse analytique des développements récents dans les cadres réglementaires sur les marchés développés et émergents et souligne clairement les défis qui demeurent à relever en termes de réglementation, d'efficience des marchés et d'accès au système financier. Ce chapitre met en évidence certains principes fondamentaux pour concevoir une meilleure politique de réglementation qui se base sur la perspective macroprudentielle et traite du système dans son ensemble. Dans ce but, le chapitre est divisé en trois sections.

La section 1 du chapitre résume les objectifs de la politique réglementaire et identifie quelques principes pour atteindre ces objectifs. Ceux-ci sont applicables à la fois aux économies avancées et aux économies émergentes, mais les besoins spécifiques de réglementation des pays émergents sont identifiés aussi à la fin de la première section.

La section 2 du chapitre traite des réformes réglementaires introduites dans l'ère post-crise (Dodd-Frank Wall Street Reform and Consumer Protection Act de 2010 et Bâle III). Une évaluation critique approfondie de ces réformes est présentée et il est souligné que ces réformes sont fortement intégrées dans les bases théoriques orthodoxes et n'impliquent pas de changement radical dans le statu quo. Cette section souligne également l'impact négatif de ces réformes sur les économies des marchés émergents. La loi Dodd-Frank, approuvée par l'administration Obama le 21 Juillet 2010, est peut-être la réforme la plus ambitieuse et de grande envergure de la régulation financière depuis les années 1930. En acceptant que la crise découle de la déréglementation financière qui a commencé dans les années 1980, la loi est devenue la pièce maîtresse de la réforme réglementaire aux États-Unis, affectant essentiellement une grande partie du système bancaire américain. D'après le Rapport Anbima (2011), les principales caractéristiques de cette loi sont l'introduction de nouvelles mesures pour la sécurité systémique. La deuxième série de réformes est introduite par Bâle III. L'accord 28 de Bâle pour les banques est basé sur un système d'exigences minimales de fonds propres et estime la capacité des marchés à mesurer et gérer efficacement les risques. Le Bâle III est un ensemble complet de mesures sur le contrôle bancaire pour renforcer la gestion de la réglementation, de la supervision et du risque du secteur bancaire. Ces mesures visent à (i) améliorer la résilience du système bancaire en ce qui concerne les chocs résultant de tensions financières et économiques, (ii) à améliorer la gestion des risques et la gouvernance, et (iii) à renforcer la transparence de la banque et de la divulgation de l'information. Un autre aspect important de ces réformes est leur aspect macroprudentiel. Elles visent à éliminer le risque systémique et le caractère pro-cyclique des risques (CBCB, 2010). Une question pertinente apparaît ici : la loi Dodd-Frank et l'accord de Bâle III ont-ils rendu les marchés financiers stables ou résistants face aux crises ? La réponse n'est guère positive. Ces réformes réglementaires sont fondées sur un cadre théorique traditionnelle ou orthodoxe et l'ordre du jour à cet effet semble inadéquat et insuffisant pour éviter une nouvelle vulnérabilité ou une récurrence des crises de la même sorte que celle de 2007. Bâle III n'aborde pas les questions fondamentales découlant de l'instabilité naturelle du système financier. Il ne parvient pas à changer le comportement des banques et à limiter la pro-cyclicité des institutions bancaires et financières. En outre, il ne parvient pas à empêcher les innovations financières complexes.

Les ratios de fonds propres introduits par Bâle I et Bâle II ont poussé les banques à s'engager dans des activités plus risquées comme les produits dérivés et les opérations hors bilan. Le risque n'a pas diminué, elle a simplement été déplacé à partir du système bancaire réglementé vers un « système bancaire parallèle » qui comprenait les SIV (Levy Rapport, 2011, p. 10).

Les marchés émergents ont des défis et des priorités différentes par rapport aux économies avancées. Ces économies sont différentes en fonction de la santé de leurs systèmes bancaires, le degré de développement de leurs marchés financiers et leurs besoins financiers spécifiques en fonction de leurs objectifs de croissance économique et de développement. La poussée des réformes a été conçue en gardant à vue les systèmes financiers de l'Europe et des Etats-Unis. Par conséquent, il est fort probable que les modifications réglementaires visant à réduire les problèmes sur les marchés financiers des économies développées s'avèrent inappropriées pour les pays émergents où, bien sûr, les positions de départ et des dynamiques sont différentes. Néanmoins, les pays émergents seront affectés soit directement par l'intermédiaire de la mise en œuvre locale de ces réformes ou indirectement à travers les banques internationales dans les économies industrialisées qui changeront leurs business modèles pour les adapter au nouveau paysage réglementaire.

La section 3 du chapitre porte sur une analyse exhaustive de l'approche macroprudentielle de la réglementation et vise à mettre en évidence le rôle central de la politique de réglementation macroprudentielle pour faire face à la crise financière. La crise a bien montré qu'une perspective purement microprudentielle sur la réglementation est inefficace pour assurer la stabilité du système et, de ce fait, il faut une perspective macroprudentielle qui évalue et répond au système financier dans son ensemble. Macroprudentielle n'est pas un terme nouveau. En fait, l'idée *macroprudentielle* remonte aux années 1970. Des documents publics font référence à des politiques macroprudentielles. Cependant, le terme n'est apparu que dans le milieu des années 1980. La réglementation macroprudentielle et la surveillance comportent deux composantes principales: d'une part, elles visent à réduire l'accumulation de risques systémiques et à conduire les participants au marché à internaliser ces risques (c'est-à-dire à les intégrer dans leurs décisions) autant que possible. Deuxièmement, elles visent à renforcer la résilience du système financier face aux chocs défavorables et aux récessions économiques; par conséquent, on contribue à réduire les coûts sociaux de l'éruption des crises (risque systémique) (Banque d'Angleterre, 2009; CSFM, 2010b; Clément, 2010; Galati et Moessner, 2011). Selon Bernanke, « une approche macroprudentielle viendrait compléter et s'appuyer sur la structure actuelle de réglementation

et de surveillance qui se concentrent sur la sécurité et la solidité des institutions et des marchés particuliers » (Bernanke, 2009). Claudio Borio de la BRI a paraphrasé Milton Friedman et dit: « Nous sommes tous des macroprudentialists maintenant ». Les économistes de la BRI ont longtemps préconisé cette approche, depuis les années 1990, et certaines des contributions précoces et importantes à ce débat comprennent plusieurs études quantitatives réalisées par la BRI sur les coûts et les avantages de l'adoption de nouvelles normes réglementaires de Bâle III (Angelini et al., 2011a ; Mag, 2010a et 2010b), et dans d'autres institutions politiques (Bean et al., 2010 ; Roger et Vlcek, 2011 ; Angelini et al., 2011b). Le groupe de travail du G20, co-présidé par Tiff Macklem et Rakesh Mohan (le vice-gouverneur de la Reserve Bank of India), a été créé en Janvier 2009 et s'est vu confier la tâche d'améliorer le bien-fondé de la réglementation financière. Le groupe a recommandé la gouvernance macro-prudentielle et des outils. Sur la base de ces travaux, le communiqué du G20 du Sommet de Londres a proposé un compromis entre l'approche réglementaire souple du modèle anglo-saxon et le modèle relativement lourd franco-allemand. Le Centre international d'études monétaires et bancaires et le Centre pour l'équipe de recherche sur les politiques économiques ont préparé le onzième rapport de Genève « Les principes fondamentaux du règlement financier », publié en Juin 2009, et demandent une orientation macroprudentielle dans la réglementation financière. La Banque d'Angleterre (2009) a publié un document de discussion très important titré « Le rôle de la politique macroprudentielle : Un document de travail' » en Novembre 2009 proposant cette approche. En outre, la Commission Warwick sur la réforme financière internationale (2009) a publié un rapport en Décembre 2009, le rapport du Comité de Bâle sur le contrôle bancaire et la Banque des règlements internationaux (BRI) a vivement encouragé une approche plus macroprudentielle de la réglementation. G-30 a créé son groupe de travail sur la politique macroprudentielle en Février 2010. Ce groupe a défini l'objectif de la politique macro-prudentielle comme étant « d'améliorer la résistance du système financier et à atténuer les risques systémiques qui se posent et se propagent à l'intérieur du système financier par l'interdépendance des institutions en vertu d'une exposition commune à des chocs et la tendance des institutions financières à agir dans des sens pro-cycliques qui amplifient les extrêmes du cycle financier » (2010 ; p. 7). La rapport du G-30 a également identifié les outils macroprudentiels et souligné la nécessité de mettre en œuvre une politique macroprudentielle au niveau mondial gardant à l'esprit les caractéristiques propres à chaque pays, les finances et les différences culturelles. Le G-20 a publié un rapport en Mars 2011 « Outils de politiques macroprudentielles et cadres » qui met en évidence les « 8 Principes macroprudentielles ».

Plusieurs économies émergentes de l'Asie ont fortement renforcé leurs systèmes financiers (par exemple, la Malaisie et la Thaïlande). Ces économies ont réduit leur dette extérieure, ont amélioré leur politique monétaire et ont amélioré leurs cadres de réglementation financière après la crise monétaire asiatique de 1997. Cependant, ces économies ont besoin de renforcer leurs cadres politiques macroprudentielles pour les raisons suivantes. Premièrement, bien que l'Asie émergente n'ait pas été exposée aux périls du système bancaire de l'ombre qui a sévi la stabilité financière dans les économies avancées, plusieurs institutions financières travaillent en dehors de la sphère des services bancaires formels (par exemple l'immobilier et les sociétés de cartes de crédit). Deuxièmement, les systèmes financiers asiatiques montrent également des signes de pro-cyclicité. Enfin les économies asiatiques comme d'autres économies émergentes sont soumises à des flux de capitaux internationaux considérables et volatiles. Tous ces trois facteurs peuvent potentiellement être la source de risques systémiques. Donc il est hautement souhaitable qu'il y ait une perspective macroprudentielle. Les économies émergentes de la région de l'Amérique latine ont également amélioré leurs cadres politiques macroprudentielles au fil des ans. Cela n'est donc pas surprenant que le secteur bancaire de ces économies ait bien résisté à la crise de 2007. Bien que les économies émergentes latino-américaines comme leurs homologues asiatiques aient une longue tradition d'utilisation des outils macroprudentiels, la plupart de ces économies n'a pas le cadre institutionnel approprié pour exécuter ces règles de manière plus efficace.

En conclusion, la crise de 2007 souligne la leçon que la réglementation financière doit être plus dynamique, prendre en compte les besoins et la nature évolutive des marchés capitalistes. Notre analyse dans les pages ci-dessus indique qu'une approche holistique est recommandée afin d'éviter les défaillances de régulation et ce plutôt que d'introduire de nouvelles couches de règles complexes. En pratique, la mantra de l'autorégulation des marchés a échoué, mais les réformes réglementaires introduites jusqu'à présent (Dodd-Frank et Bâle III) sont profondément ancrées dans la théorique orthodoxe, ce qui signifie que rien ne changera dans la pratique. Ces réformes semblent insuffisantes pour réduire la spéculation des institutions financières. Cette crise a mis en évidence les défis réglementaires pour les économies émergentes. Sur la base de nos analyses, il peut être conclu que les reformes de Bâle III ne sont pas pertinentes pour les besoins des pays émergents qui devraient veiller à ne pas suivre aveuglément ces règles. La crise de 2007 a souligné l'importance des perspectives macroprudentielles pour un cadre réglementaire. Bien que, la politique macroprudentielle ne soit pas une panacée, elle aide à comprendre l'ensemble des risques et la mise en œuvre

correcte des mesures macro prudentielles peut réduire les coûts de la crise financière. Les réformes réglementaires introduites jusqu'à présent sont-elles suffisantes? La question ne peut être résolue facilement, car la réponse réglementaire des économies avancées et des économies émergentes à la crise financière est incomplète et de nombreuses réformes n'ont toujours pas été complètement mises en œuvre. Nous devons être conscients que la nouvelle réglementation financière ne supprime pas tous les risques du secteur financier. Inévitablement, un difficile équilibre doit être trouvé entre la protection de notre système financier et la croissance économique.

Conclusion générale

Cette thèse de doctorat a étudié l'éruption de la crise de 2007, sa contagion aux économies émergentes et l'évaluation critique des réponses politiques de ces économies. Elle a également mis en évidence les insuffisances réglementaires d'avant la crise et de l'après-crise. Ainsi, nous avons tenté d'enquêter sur les causes et la profondeur de cette crise en traçant ses racines dans la théorie et la politique macroéconomiques dominantes et l'étude a dûment souligné certains de ses défauts. Dans ce sens, la thèse a tenté de fournir une large base théorique au diagnostic de ce qui s'est passé dans la crise de 2007 au cœur du capitalisme (les marchés financiers américains) et sa contagion en temps réel aux économies émergentes. Sur la base de ce diagnostic, deux grandes conclusions importantes peuvent être tirées :

1) Les opérations financières ne doivent pas être laissées aux aléas des marchés libres et dérégulés. Un cadre réglementaire ayant des orientations macroprudentielles doit être mis en place pour remplacer l'approche dominante du marché libre. Les idées analytiques et politiques (« gouvernement puissant » et « banque centrale puissante ») de l'économiste hétérodoxe Hyman Minsky semblent appropriées pour comprendre et limiter la fragilité des marchés capitalistes.

2) Il est conseillé pour les économies émergentes d'adopter des politiques sans perdre de vue leurs propres caractéristiques macroéconomiques et le niveau de développement financier et non d'avancer par la foi aveugle dans la libéralisation du marché ou le paradigme de la politique néolibérale.

Agenda de recherche future

En écrivant cette thèse, nous avons dû faire des choix parmi de nombreuses questions à analyser pour comprendre le phénomène d'instabilité financière dans les économies de marché.

La crise financière a généré des quantités importantes de nouvelles recherches. De nombreuses questions restent à résoudre et il y a beaucoup de place pour de futures recherches fructueuses, surtout afin de contribuer à façonner l'évolution continue de l'économie de marché. Donc, ici, nous mettons en évidence un certain nombre de questions ouvertes. Ceci, bien sûr, ne se veut pas une liste exhaustive des questions de recherche futures dans ce domaine. Cependant, notre analyse souligne un certain nombre de pistes intéressantes de recherche future à explorer. Tout d'abord, notre analyse indique l'importance d'améliorer notre compréhension des liens entre les marchés émergents et également entre les marchés émergents et les économies avancées. Deuxièmement, il sera utile d'obtenir une étude détaillée sur l'efficacité des réserves de change comme un coussin de sécurité contre la vulnérabilité et le crise. Troisièmement, une question importante pour la recherche future peut être la nature de la structure des marchés financiers dans les économies émergentes après la crise de 2007 et la question de l'inclusion financière.